External stakeholder engagement in complex projects

Jere Lehtinen
External stakeholder engagement in complex projects

Jere Lehtinen

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Abstract
Engaging external stakeholders, like authorities, communities, and non-governmental organizations, is an essential part of complex project management. The objective of this dissertation is to examine how project organizations engage external stakeholders in complex projects.

The objective is approached with three research questions. (1) How do project organizations organize external stakeholder engagement in complex projects? (2) How do project organizations engage and disengage external stakeholders over project’s lifecycle, and why? (3) How do project organizations communicate effectively in social media to engage external stakeholders?

The overall research strategy is case research, and each research question is addressed with an empirical case study. The first study is a qualitative, multiple-case study, the second study is a qualitative, longitudinal single-case study, and the third study is a quantitative, embedded single-case study. Each case study forms an individual and original research article. The empirical data includes semi-structured interviews, project and organization reports, public documents, news articles, and social media messages from three infrastructure projects.

The findings of this dissertation provide new understanding regarding stakeholder engagement in the following three ways. First, the findings indicate that three organizing solutions, governance-based, value-based, and dynamism-based solutions, facilitate organizing external stakeholder engagement. The three solutions divide external stakeholder engagement into appropriate activities, allocate the activities to relevant project personnel, and offer the required information and motivation to execute the activities. Second, the findings show that a project organization manages the interaction with external stakeholders based on four rationales: framing the project, legitimizing governance, maintaining interaction, and expanding governance, bound to project lifecycle phases and changing stakeholder environment. The rationales highlight the essential role of disengagement in value creation as the project organization constantly balances between activities to engage external stakeholders and activities to disengage external stakeholders over the project lifecycle. Third, the findings demonstrate that engagement effectiveness depends on a project organization’s understanding of the target stakeholder, suitable discussion topics, and communication modes. A project organization's communication that offers information about sustainability issues, or is cooperative or entertaining, engages external stakeholders effectively in social media.

Overall, the above-described findings offer novel insights into how project organizations engage external stakeholders in complex projects, contributing to stakeholder theory and complex project management research.

Keywords
Stakeholder engagement, Complex projects, External stakeholders, Stakeholder theory, Project management

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Tiivistelmä
Ulkoisten sidosryhmien, kuten kansalaisjärjestöjen, viranomaisten ja yhteisöjen, sitouttaminen on välttämätön osa monimutkaisten projektien hallintaa. Tämän väitöskirjan tavoitteena on tutkia miten projektiorganisaatiot sitouttavat ulkoisia sidosryhmiä monimutkaisten projektien toimintoihin.

Tavoitetta lähestyttäen kolmen tutkimusyksynnän kautta. (1) Miten projektiorganisaatiot organisoivat ulkoisten sidosryhmien sitouttamisen toimintoja? (2) Miten projektiorganisaatiot sitouttavat ja irrottavat ulkoisia sidosryhmiä projektiin elinkaaren aikana ja miksi? (3) Miten projektiorganisaatiot kommunikoivat vaikuttavasti sosiaalisessa mediassa sitouttamiseen ulkoisia sidosryhmiä?

Väitöskirja noudattaa tapaustutkimusstrategiaa ja jokaista tutkimusyksynnän lähestyttäen empirisellä tapaustutkimuksella. Ensimmäinen tutkimus on laadullinen monitapaustutkimus, toinen on laadullinen yksittäistapaustutkimus, ja kolmas on määrällinen yksittäistapaustutkimus. Väitöskirjan empirinen aineisto sisältää haastatteluja, projekti- ja organisaatiopapereita, julkisia asiakirjoja, uutisartikkeleita ja sosiaalisen median aineistoa kolmesta infrastruktuurinprojektista.


Yllä kuvatut löydökset tuovat uutta tietoa sidosryhmäteoriaan ja monimutkaisten projektien tutkimukseen.

Avainsanat
Sidosryhmien sitouttaminen, Monimutkaiset projektit, Ulkoiset sidosryhmät, Sidosryhmäteoria, Projektiinhalinta

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Sammandrag

Att engagera externa intressenter, som myndigheter, samhällen och icke-statliga organisationer är en viktig del av komplex projektledning. Syftet med denna avhandling är att undersöka hur projektorganisationer engagerar externa intressenter i komplexa projekt.

Målsättningen uppnås med tre forskningsfrågor. (1) Hur organisrar projektorganisationer externt intressentengagemang i komplex projekt? (2) Hur engagerar och avkopplar projektorganisationer externa intressenter över projektets livscykel, och varför? (3) Hur kommunicerar projektorganisationer effektivt i sociala medier för att engagera externa intressenter?


Resultaten av denna avhandling ger ny förståelse för intressentengagemang på tre följande sätt. För det första påvisar resultaten att tre organisationslösningar, styrningsbaserade, värdebaserade och dynamikbaserade lösningar, underlåtar organisationer av externa intressentengagemang. De tre lösningarna delar upp externa intressenters engagemang i lämpliga aktiviteter, fördelar aktiviteterna till relevant projektpersonal och erbjuder nödvändig information och motivation för att utföra aktivitetera. För det andra visar resultaten att en projektorganisation hanterar växelverkan med externa intressenter baserat på fyra logiska resonemang; inramning av projektet, legitimering av styrning, upprätthållande av interaktion och utökad styrning, bunden till projektets livscykelfaser och förändrad intressentmiljö. Dessa resonemang belyser att en projektorganisation ständigt balanserar mellan aktiviteter för att engagera externa intressenter och aktiviteter för att koppla bort externa intressenter under projektets livscykel. För det tredje visar resultaten att engagemangseffektiviteten beror på en projektorganisations förståelse om målintressenten, lämpliga diskussionsämnen och kommunikationssätt. En projektorganisationers kommunikation som erbjuder information om hållbarhetsfrågor, eller är samarbetsvillig eller underhållande, engagerar externa intressenter effektivt i sociala medier.

Sammanfattningsvis, ger de ovan beskrivna resultaten ny insikt i hur projektorganisationer engagerar med externa intressenter i komplexa projekt, vilket bidrar till intressentteori och komplex projektledningsforskning.

Nyckelord
Intressentengagemang, Komplexa projekt, Externa intressenter, Intressentteori, Projektledning

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...was said to me after my mid-term review seminar. I was struggling with the vast scope of my research because I had many research ideas pointing in different directions. Later on, I had an epiphany – not everything can, or even should, be included in one PhD thesis. I came to realize that it is more about the focus than trying to cover everything. A PhD thesis does not offer omniscience of any phenomenon, but in fact, it makes a very specific contribution to knowledge with a morsel of new information. Even though the previous sounds a bit banal, the journey to complete a PhD thesis is nothing less than an adventure full of joy and struggle – from first peer-reviewed publication to first rejection, making one grow as a person and researcher. Now, my incredible journey is nearing its end, and the metaphorical "academic driver's license" awaits me in the public examination where I will defend my thesis to earn my doctorate. But, let me briefly reminisce how it all started, deterministically speaking, from a simple decision.

Roughly five years ago, I was short two credits in completing the minor module of my Master of Science degree at Aalto University. I minored in industrial management, project business, because complex projects had always intrigued me due to their unique and complicated nature. I majored in automotive engineering, and one of my lifelong dreams was to work in the automotive industry, preferably in complex research and development projects, where I could combine my major and minor studies and perhaps even do a PhD later.

There were limited options to acquire exactly two credits since most of the courses yielded three or five credits. But, an individual assignment in industrial management was a promising option as the scope and schedule were tailored according to student’s needs. As a slight optimizer, I decided to complete an individual assignment, a literature analysis in industrial management for Professor Karlos Artto. Needless to say, this decision was the beginning of something bigger – "a life-defining moment" to put my endeavors of having a career in the automotive industry on pause and instead focus on research in project management. While the previous may sound fatal, I am truly grateful that it occurred, and it is mostly thanks to Professor Karlos Artto.

While words fail me to express how thankful I am, I still try to offer my sincerest gratitude to you, Karlos Artto, my passionate supervisor, for believing in
me and inviting me to your team in the first place. Although our co-authored papers are not directly included in this dissertation, all the invaluable learnings, wisdom, and insights that I have received from you are an integral part of its ethos. Without your encouragement to aim continuously higher, I would not have completed this project. Thank you for being my inspirational sparring partner in meetings, conversations, phone calls, and emails where we exchanged and debated ideas. I am grateful that you have always been willing to invest a significant amount of time and resources in me. It has been my pleasure to research and teach with you during these five years, and I hope we will continue to do so in the future.

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Especially, I would like to thank Associate Professor Kirsi Aaltonen for being my invaluable co-author throughout this project. Collaboration with you has always been seamless, and I highly value all the help, access to data, guidance, feedback, and insights that you have kindly offered me. I appreciate your novel and original ideas and commitment to our joint research. I am delighted that we share this similar research interest, and I look forward to continuing to do research with you in the future.

Naturally, I would have never finalized this PhD project without the honorary pre-examiners and opponent. Hence, I express my sincerest gratitude to Professor Pernille Eskerod and Professor Aino Halinen-Kaila for being the pre-examiners and critically evaluating my dissertation. Thank you for the constructive and positive feedback that helped me to develop my dissertation and encouraged me to finalize it. Also, I warmly thank Professor Leena Aarikka-Stenroos in advance for agreeing to be my opponent and another external examiner.

Other important individuals are worth mentioning. I would like to especially thank my former colleague and co-author, Juri Matinheikki, for sharing the doctoral journey with me. Working with you has been inspirational, and I am thankful for all the joint research work, meaningful discussions, shared insights and co-teaching. Also, I want to thank Associate Professor Tuomas Ahola and Assistant Professor Antti Peltokorpi for being my co-authors in other articles and providing valuable lessons and insights. Working with you has been exciting. Antti, I also thank you for being on my doctoral steering committee. It is also essential to acknowledge Professor Kari Tanskanen and Professor Juha Laurila. Thank you both for being my mid-term reviewers and providing me invaluable feedback that facilitated me to develop as a researcher and continue with my PhD project. Also, Professor Thomas Lechler, thank you for offering insightful tips and feedback during your visit to Finland. Lastly, I want to thank Professor Jaakko Kujala for the countless discussions related to research and teaching.

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To new adventures!

Jere Lehtinen
Vantaa, March 2021
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<tbody>
<tr>
<td>B2B</td>
<td>Business-to-business</td>
</tr>
<tr>
<td>EPOC</td>
<td>Engineering Project Organizations Conference</td>
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<tr>
<td>EUR</td>
<td>European monetary unit</td>
</tr>
<tr>
<td>EURAM</td>
<td>European Academy of Management</td>
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<tr>
<td>H</td>
<td>Hypothesis</td>
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<tr>
<td>ICC</td>
<td>Intraclass correlation coefficient</td>
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<tr>
<td>ICT</td>
<td>Information communication technology</td>
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<tr>
<td>IPMA</td>
<td>International Project Management Association</td>
</tr>
<tr>
<td>IRNOP</td>
<td>International Research Network on Organizing by Projects</td>
</tr>
<tr>
<td>IT</td>
<td>Information technology</td>
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<tr>
<td>Ln</td>
<td>Natural logarithm</td>
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<td>MLR</td>
<td>Multiple linear regression</td>
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<td>MS</td>
<td>Microsoft</td>
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<tr>
<td>NGO</td>
<td>Non-governmental organization</td>
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<td>PR</td>
<td>Public relations</td>
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<td>Q</td>
<td>Quarter of the year</td>
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<td>RQ</td>
<td>Research question</td>
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<tr>
<td>$t_n$</td>
<td>Time</td>
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<tr>
<td>TAD</td>
<td>Tapiola Area Development</td>
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<td>UGT</td>
<td>Uses and gratifications theory</td>
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<tr>
<td>UK</td>
<td>The United Kingdom</td>
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<td>VIF</td>
<td>Variance inflation factor</td>
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<td>2D</td>
<td>Two dimensional</td>
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<td>3D</td>
<td>Three dimensional</td>
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List of Publications

This doctoral dissertation consists of this summary and of the following publications which are referred to in the text by their numerals (i.e., Article 1 = A1).


Author’s Contribution

**Publication 1:** Organizing external stakeholder engagement in inter-organizational projects: Opening the black box.

Aaltonen collected interview data and suggested the initial paper idea to Lehtinen. Lehtinen gathered archival data and developed the theoretical framing with Aaltonen’s support. Lehtinen developed the research design and analyzed both interview and archival data. Lehtinen developed the research iteratively by integrating Aaltonen’s comments, texts, and ideas. Lehtinen led previous versions and prepared a manuscript for EURAM conference in 2019, where Lehtinen also presented the study. Lehtinen led journal submission and did a major part of the revising work. Lehtinen acts as the corresponding author.

**Publication 2:** Stakeholder management in complex product systems: Practices and rationales for engagement and disengagement.

Data collected jointly by Lehtinen, Aaltonen, Karlos Artto, Tuomas Ahola, and Antti Peltokorpi. The initial paper idea and theoretical framing jointly with Aaltonen. Lehtinen developed the research design and analyzed the data. Lehtinen developed the study iteratively by incorporating Aaltonen’s and Rajala’s comments, texts, and ideas. Lehtinen led previous versions and prepared manuscripts for IRNOP and EPOC conferences in 2017. Lehtinen also presented the research at both conferences. Lehtinen led journal submission and did a major part of the revising work. Lehtinen acts as the corresponding author.

**Publication 3:** Effective social media communication for engaging external stakeholders in infrastructure projects.

Initial paper idea jointly by Lehtinen and Aaltonen. Lehtinen came up with the theoretical framing, research design and collected and analyzed the data. Lehtinen prepared the manuscript and wrote iteratively by integrating Aaltonen’s texts, comments, and ideas. Lehtinen led previous versions and prepared manuscripts for EURAM and IRNOP conferences in 2020. Lehtinen leads the journal submission and has done a major part of the revising work. Lehtinen acts as the corresponding author.
Clarification of subcontracting

The interviews used as the empirical data in A1 and A2 were transcribed verbatim by Tutkimustie Oy. I assure the quality of the transcripts and ensure that the contents of the interviews have not changed during the transcription process.

I guarantee that the subcontracting has not affected the scientific content of my dissertation.

Guaranteed by

Jere Lehtinen
1. Introduction

1.1 Empirical context and phenomenon

Appeals are challenging for the construction industry, as sometimes appeal processes might take several years, setting back projects and incurring costs. Ill-founded appeals are also submitted to obstruct and set back the construction process deliberately.

-Aamulehti newspaper, March 28, 2017

People in Uruguay protest against a Finnish company’s [UPM’s] plans for world’s largest pulp factory – People shout in the streets” UPM out!”-Yle newspaper, December 28, 2018

Raide-Jokeri [a complex tramway project] rouses emotions across Espoo:” None of our concerns have been considered at any point in the planning.”

-Helsingin Sanomat newspaper, November 9, 2019

A setback for new tramway project: Flying squirrel sightings [and appeals from non-governmental organizations] suspend construction works – If an exceptional permit is not granted, “it must be contemplated whether Raide-Jokeri can be completed or not”

-Helsingin Sanomat newspaper, May 29, 2020

These newspaper quotes illustrate that complex projects, including but not limited to infrastructure, water and energy, industrial processing plant, large vessel, IT, and healthcare solution projects, generate environmental, social, and economic concerns among external stakeholders (Geraldi et al., 2011; Maylor & Turner, 2017). External stakeholders are those organizations, groups, and individuals who do not have an official, formal or contractual link to a complex project’s organization but may affect or be affected by the complex project and achievement of its outcomes (cf. Cleland, 1986, p. 281; Winch, 2004, p. 323). Complex projects often involve multiple external stakeholder groups, such as authorities, (local) communities, non-governmental organizations (NGOs), end-users, media, and the general public. The multiplicity of external stakeholders implies a great degree of social complexity due to the large number, quality, and variety of relationships among a project organization and its external stakeholders (Flyvbjerg, 2014).
But why should any project manager care about external stakeholders? Cannot project management internally plan and implement a complex project according to the principles of Fordism\(^1\) and Taylorism\(^1\) to ensure the successful attainment of project objectives? For understanding the relevance of external stakeholders, we need to delve beyond the newspaper quotes into management research.

Existing management research has shown that managers of complex projects often portray external stakeholders as barriers to value creation and project success (see, e.g., Liu et al., 2018; Di Maddaloni & Davis, 2018). This line of research views external stakeholders as risks for the project, and their impacts are generally framed as harmful (Olander & Landin, 2005; Yang et al., 2016; Yu et al., 2017). For instance, empirical studies have offered evidence of how external stakeholders’ demands for improved social, economic, and environmental responsibility and enhanced pursuit of social goals can result in harmful activities, such as complaints, appeals, boycotts, letter-writing campaigns, and protests (Aaltonen & Kujala, 2010; Nguyen et al., 2019). These harmful activities can result in halts, unplanned and unwanted project changes, loss of reputation for involved organizations, litigation, and legal disputes that all detrimentally impact complex projects’ operational performance and outcomes (Aaltonen et al., 2015; Di Maddaloni & Davis, 2017).

Conversely, another stream of management research depicts external stakeholders as enablers of value creation and success, and their impacts are generally framed as beneficial (Garriga, 2014). Although this view is somewhat limited in the context of complex projects with a few exceptions (see, e.g., Artto et al., 2016; Brady et al., 2005; Fuentes et al., 2019), research in other areas, such as supply chains and services (Lusch et al., 2010; Möller et al., 2008), business networks (Lacoste, 2016; Matinheikki et al., 2017; Romero & Molina, 2011) and innovation networks (Jaakkola & Hakanen, 2013; Rampersad et al., 2010) has elaborated this perspective. Research on different kinds of ecosystems and platforms has also focused on external stakeholders’ value-creating roles and activities (Autio & Thomas, 2014; Perks et al., 2017; Thomas et al., 2014). This stream of management research leans on the cooperative nature of value creation in modern business (Filieri et al., 2014), where organizations are dependent on external inputs and resources to meet complex market needs (Lusch et al., 2010). Hence, external stakeholders’ participation is crucial for organizations’ long-term performance and survivability (Henisz et al., 2014; Maylor & Turner, 2017; Mol & Birkimshaw, 2014; Reypens et al., 2016). The above notions can be considered especially relevant in the context of complex projects where the ‘market’ is ill-defined (volatile demand, low contestability, and bureaucratically administered) and the production requires collaborative efforts from a broad network of heterogeneous actors to deliver unique, high-tech and high-cost goods and services within pre-defined budget and schedule (Hobday, 1998).

\(^1\) In this context, Fordism and Taylorism can be understood as the manufacturing of a complex project using mass produced components and standardized work practices with a primary focus on eliminating waste, strictly following pre-determined plans and designs, and achieving economic efficiency over other objectives.
The aforementioned reasons are legitimate for justifying why managers of complex projects care about external stakeholders. In practice, complex project managers attempt to consider and involve a wide range of external stakeholders in project activities to enable value creation and project success and reduce harmful impacts. Conceptually, this task can be defined as (external) stakeholder engagement (Greenwood, 2007), which is a pivotal part of complex project management (Aaltonen & Kujala, 2016; Winch, 2017).

However, external stakeholders are all not alike since different stakeholder groups often have conflicting interests, expectations, and claims for a complex project (Aaltonen & Kujala, 2010; Davis, 2014) that may change as the project proceeds (Maylor & Turner, 2017). Also, the organizational boundaries of a complex project are dynamically changing (Bakker et al., 2016; DeFillippi & Sydow, 2016), meaning that external stakeholders may enter and exit the project at any time during its lifecycle. These characteristics introduce uncertainty and unpredictability into a project (Geraldi et al., 2011) and commonly cause conflicts between external stakeholders and the project organization (Derakhshan et al., 2019a; Jepsen & Eskerod, 2009), complicating the task of external stakeholder engagement.

Additionally, a project organization can itself complicate the task of engaging external stakeholders. A complex project’s organization is formed by multiple autonomous actors (e.g., client, contractor, suppliers, subcontractors, owner) who work together toward a shared project goal for a limited time (Jones & Lichtenstein, 2008). However, the actors can react very differently to external stakeholders’ requirements due to their competing priorities and objectives (Aaltonen et al., 2015). The previous also means that a project organization can have trouble identifying relevant external stakeholders, let alone their interests, expectations, and claims for the complex project (Missonier & Loufrani-Fedida, 2014). In fact, recent research has demonstrated that implementing external stakeholder engagement in complex projects is hugely challenging in both theory and practice (Eskerod & Huemann, 2014; Mok et al., 2015).

Under these circumstances, it is axiomatic that a fundamental challenge in managing complex projects is the practical and theoretical problem of implementing external stakeholder engagement. Against this background, this dissertation project’s focus is to augment understanding of the problem of implementing external stakeholder engagement in complex projects. This research problem can be formalized as the overarching research question (RQ) of the dissertation:

**Overarching RQ: How does a project organization of a complex project implement external stakeholder engagement?**
1.2 Objectives and theoretical positioning

This dissertation aims to enrich understanding of the implementation of external stakeholder engagement in complex projects by addressing the overarching RQ. Since the concepts of external stakeholder and stakeholder engagement are rooted in stakeholder theory (Parmar et al., 2010), it is a well-suited theoretical foundation for this dissertation. Stakeholder theory is reviewed to gain a deeper and broader understanding of the dissertation phenomenon, connect the dissertation to an established theoretical discourse, identify knowledge gaps, and divide the overarching RQ into specific RQs. The specific RQs are approached with specific theoretical frameworks and addressed with empirical studies to develop new theory in the form of novel conceptual models and theoretical propositions about stakeholder engagement. Such models and propositions offer new insights into stakeholder theory and research.

The key arguments, assumptions, and concepts of stakeholder theory that form the foundation of this dissertation are summarized in the following. A more profound review is provided in section 2.2.

Stakeholder theory originates from business ethics and strategic management and challenges the neo-classical view of the firm (Freeman, 1984). Instead of seeing that the purpose of a firm is to satisfy its stockholders’ needs by ensuring economic profitability and value capture, stakeholder theory claims that firms have broader responsibilities in modern and turbulent business environments that are not limited to customers and suppliers (Freeman & Reed, 1986). Ultimately, stakeholder theory argues that the raison d’être of a firm is to create value for all stakeholders beyond the close stakeholder circle of stockholders, suppliers, and customers without whose support the firm would cease to exist (Donaldson & Preston, 1995; Harrison & Wicks, 2013). Despite being initially founded in the context of firms, stakeholder theory has been applied to many organizational contexts, including complex projects and project management (Littau et al., 2010).

Many stakeholder theorists have argued that the theory is not a single theory "but an amalgamation of eclectic narratives (Gilbert & Rasche, 2008) which has emerged from, and is subject to, multiple interpretations and applications from business ethics and corporate social responsibility to strategic management, corporate governance and finance" (Miles, 2017). Despite its eclectic and pluralistic nature (Freeman, 1994; Phillips et al., 2003), stakeholder theory is based on four fundamental and cognate theses. These are descriptive, instrumental, normative, and managerial theses (Donaldson & Preston, 1995), which enable theorizing about external stakeholders and stakeholder engagement.

The descriptive thesis tells us that an organization is surrounded by stakeholders and advises how an organization and its stakeholder behave and interact (Freeman, 1999; Jawahar & McLaughlin, 2001). The normative thesis holds the descriptive thesis against ethical and moral standards and tells us how an organization and its stakeholders should behave and interact (Burton & Dunn, 1996; Clarkson, 1995; Gibson, 2000). The instrumental thesis is concerned with causality in the relationships between and behaviors of an organization and its stakeholder, connecting processes (means) to outcomes (ends) (Hillman &
Keim, 2001; Jones, 1995). The managerial thesis claims that ultimately stake-
holder theory is a theory about managerial decision-making (Donaldson & 
Preston, 1995; Phillips et al., 2003).

Stakeholders can be classified in many different ways (Miles, 2017), but one 
of the most common classifications allocates stakeholders into two categories, 
internal and external stakeholders (Freeman et al., 2010, p. 105). Internal stake-
holders include actors who have a formal, official, or contractual link to the or-
ganization, such as employees and managers in a firm (Savage et al., 1991). In 
turn, external stakeholders are those actors who do not have a formal, official or 
contractual link to the organization but may affect or be affected by it, such as 
NGOs, end-users, and communities in the context of a firm (Eesley & Lenox, 
2006). The external–internal classification provides an appropriate conceptual-
ization to identify, define, and distinguish stakeholders in this dissertation.

Stakeholder engagement can be defined as those practices which an organiza-
tion undertakes to involve stakeholders in organizational activities (Greenwood, 
2007). Stakeholder engagement can be considered as the successor of "manage-
ment-for-stakeholders," "managing for stakeholders," and "management with 
stakeholders" approaches to stakeholder management that all revolve around 
the paradigm of joint value creation (Evan & Freeman, 1993; Freeman et al., 
2007; Signori, 2017). The reasoning for the value creation paradigm and inher-
ently for stakeholder engagement is that by creating as much value as feasible 
to stakeholders, the organization also maximizes its value capture and long-
term survivability (Freeman et al., 2010, p. 282). Hence, stakeholder engage-
ment is considered the heart of stakeholder theory, and it has become the con-
cept describing how different organizations practice stakeholder theory (Kujala 
& Sachs, 2019). Consequently, generating rich empirical and contextual under-
standing of stakeholder engagement is the foreground of developing stake-
holder theory (Nartey, 2019).

1.3 Philosophical considerations

This dissertation adopts a critical realist approach (Bhaskar, 2013) to stake-
holder engagement. According to critical realism, ontology is stratified into 
three realms (Easton, 2010), where objects (social and material entities with 
powers to behave) exist in the static realm of real, but they behave in the realm 
of actual if and when their powers are activated, resulting in events and effects 
(outcomes). The third realm, empirical, is where observations are done regard-
ing either the actual or the real, but the observations are incomplete because an 
observer can never fully understand the real or the actual (Easton, 2010). A crit-
ical realist viewpoint to causation argues that an entity exerts its powers through 
mechanisms to cause an outcome where contingent conditions (other mecha-
nisms) determine the outcome (Sayer, 2000, p. 15).

The dissertation follows Greenwood’s (2007) managerial approach to stake-
holder engagement, where the concept is defined as those practices which an 
organization undertakes to involve stakeholders in organizational activities. The 
definition explicitly recognizes project organization as an entity that seeks to
engage external stakeholders and organizational practices as the central mechanism to achieve the outcome. Even though the adopted definition does not explicitly acknowledge the role of contingent conditions, they have been addressed in many subsequent discussions following Greenwood’s approach (regarding the role of communication as a contingent condition see, e.g., Bebbington et al., 2007; Kaptein & Van Tulder, 2003; Kujala & Sachs, 2019; Vinnari & Dillard, 2016). Thus, I bring forward that a critical realist view fits well with the conceptual definition of the phenomenon, offering a suitable ontoepistemological approach in this dissertation.

From a critical realist viewpoint, three central perspectives can be distinguished using the critical realist view of causation (Sayer, 2000), where a project organization (entity) exerts power through engagement practices (mechanism) to engage stakeholders where communication (contingent condition) determines the outcome. The three perspectives are thus organizing (see, e.g., Baumann-Pauly et al., 2013; Hummels, 1998; Yuan et al., 2011), practice (see, e.g., Frooman, 1999; Savage et al., 1991), and communication (see, e.g., Bebbington et al., 2007; Kujala & Sachs, 2019). The three perspectives are used to approach the existing theory and research regarding stakeholder engagement. The purpose is to identify what is known about the phenomenon and what are the potential exciting knowledge gaps.

The organizing perspective puts the organization itself in the spotlight and seeks to understand both the organization and overall organizing of stakeholder engagement. A central assumption here is that the agency and point of view lie primarily in the project organization as the entity which organizes itself and seeks to engage external stakeholders. The project organization engages external stakeholders by exerting its power through mechanisms known as engagement practices (practice perspective). The practice perspective thus deepens the focus on the practice of stakeholder engagement and seeks to understand the project organization’s interaction mechanisms in-depth. However, the engagement practices are not the only mechanisms; as in critical realism, there are always contingent conditions, i.e., other mechanisms that influence the outcomes. Perhaps the most prominent in this phenomenon is the communication taking place within the engagement practices. Hence, the communication perspective focuses on the engagement practices’ details by understanding the project organization’s specific communication manners.

More thorough reasoning related to the critical realist view on stakeholder engagement is provided in section 2.3.

1.4 Research gaps and questions

This subsection will briefly introduce the research gaps and questions, which are elaborated further in the theoretical background section (section 2.4).

The organizing perspective addresses how an organization can organize stakeholder engagement. The organizing can be described as a continuous process including, e.g., the establishment of engagement objectives, integration of stakeholders’ values and interests in organizational activities, measurement of
engagement performance, verification and disclosure of results, and improvement of the process and performance (Hummels, 1998). The organizing process is executed through daily organizational practices and routines, including specific organizational roles, responsibilities, and activities for stakeholder engagement (Yuan et al., 2011). The dimensions of commitment, internal structures and procedures, and external collaboration can be distinguished in the organizing process (Baumann-Pauly et al., 2013).

Research in the context of complex projects has scrutinized the specific organizational roles, responsibilities, and activities of the process, placing much emphasis on external stakeholders as the target group of stakeholder engagement (Derakhshan et al., 2019b; Di Maddaloni & Davis, 2017; Mok et al., 2015). This line of research emphasizes project managers’ responsibilities, roles, and activities as the leaders of the organizing process (Gil, 2010; Di Maddaloni & Davis, 2018). Some attention has also been paid to clients’ (Winch, 2017) and project owners’ (Aaltonen et al., 2008) responsibilities, roles, and activities, but suppliers’ roles, responsibilities, and activities have been widely overlooked. The identifiable responsibilities, roles, and activities are somewhat simplified and isolated in single organizations, mainly neglecting the three dimensions and how multiple organizations together organize external stakeholder engagement (Aaltonen & Sivonen, 2009). The joint organizing by multiple organizations can be considered paramount in the context of complex projects, where a mutual understanding of coordination trajectories among multiple organizations working toward a shared objective is pivotal to make sure that stakeholder engagement is organized appropriately and coherently (Gable & Shireman, 2005; Jones & Lichtenstein, 2008).

It seems that existing research is heavily focused on single organizations as comprehensive empirical studies of inter-organizational contexts such as complex projects are rare. Hence, previous research offers a limited view to address the organizing of external stakeholder engagement in complex projects because it takes for granted the three dimensions and the details and actual practice of distributing responsibilities, roles, and activities among multiple organizations. Consequently, examining and understanding how multiple organizations, forming a project organization, organize jointly external stakeholder engagement in the context of complex projects is relevant for developing a more contextualized and nuanced understanding of stakeholder engagement. To this end, the dissertation will explore the following RQ:

**RQ1:** How do multiple autonomous organizations, forming a project organization, jointly organize external stakeholder engagement in the context of complex projects?

The practice perspective focuses on the practice of stakeholder engagement and seeks to understand the interaction between an organization and its stakeholders (Savage et al., 1991). Research in the context of complex projects has described the practice as a managerial process that begins with the identification and classification of external stakeholders and analysis of their environment.
Introduction

(Aaltonen & Kujala, 2016; Olander & Landin, 2005). The process continues by devising appropriate engagement strategies (Aaltonen & Sivonen, 2009; Eskerod & Vaagaasar, 2014) that reduce to concrete engagement practices that include organizational arrangements and activities to be executed by the liable personnel (Yang et al., 2011). Prior research has also contemplated the different reasons for engaging different stakeholders, including instrumental (Mitchell et al., 1997), resource-dependency (Frooman, 1999), identity-based (Scott & Lane, 2000), institutional (Orr & Scott, 2008), value creation (Eskerod & Ang, 2017) and moral reasoning (Freeman et al., 2007). In addition to focusing on a project organization, extant research has provided understanding of external stakeholders' strategies, activities, and arrangements related to the practice of stakeholder engagement (Aaltonen et al., 2010; Nguyen et al., 2019).

Even though there is a wealth of research into the practices and reasons for engaging external stakeholders, decisions regarding when to engage external stakeholders are challenging and continuously debated among complex project researchers (Eskerod et al., 2015). On the one hand, some researchers suggest that a broad and transparent engagement of external stakeholders during the early lifecycle phases contributes to complex projects’ performance as every stakeholder’s views can be incorporated into objective and success definitions (Missonier & Loufrani-Fedida, 2014). On the other hand, this kind of boundaryless and broad approach can be very costly and resource-intensive, with difficulties in decision-making that may result in cul-de-sacs (Aaltonen & Kujala, 2010). Thus, disengagement of external stakeholders can also be favored in the early lifecycle phases because engaging stakeholders who do not own crucial resources for the project’s progress is not valuable for ensuring the survival of the complex project (Eskerod et al., 2015; Flyvbjerg, 2014). Hence, timely engagement and disengagement of external stakeholders can be considered an essential feature in governing a complex project.

However, the existing research on the timing of engagement and disengagement is scarce, and the reasons for engagement and disengagement are focused on external stakeholders’ attributes instead of associating the reasons to the actual dynamic and evolving multi-stakeholder setting of complex projects (Bakker et al., 2016; DeFillippi & Sydow, 2016) where different stakeholders enter and exit the system unexpectedly over time. The inter-organizational and dynamic stakeholder nature of complex projects complicates timely engagement and disengagement of external stakeholders. The practices utilized to engage and disengage external stakeholders emerge from the networked interactions of internal and external stakeholders over a project’s lifecycle instead of being simplistically devised by a single organization. Therefore, existing research lacks an in-depth understanding of how and why external stakeholders are engaged and disengaged in complex projects over time. Under these circumstances, examining the temporal dynamics and reasoning of stakeholder engagement and disengagement over a complex project’s lifecycle is relevant for developing a richer and more contextualized understanding of stakeholder engagement. To this end, the dissertation will explore the following RQ:
RQ2: How does a project organization of a complex project engage and disengage external stakeholders over the project’s lifecycle, and why?

The communication perspective focuses on the communication between an organization and its stakeholders, which takes place within the different engagement practices that can be considered as different communication media (Kujala & Sachs, 2019). Existing research is founded on a contingency view, which indicates that an organization must adjust the communication according to the equivocality and uncertainty of information that needs to be delivered to different stakeholders (Monteiro de Carvalho, 2013). The contingency view also indicates that the use of a specific communication medium affects the richness and amount of information that can be processed to stakeholders, which often leads to challenges in balancing the depth versus breadth of communication (Daft & Lengel, 1986).

For instance, conventional communication media such as information seminars and events, websites, leaflets, and articles are suitable for general information dissemination towards a broader spectrum of external stakeholders in complex projects (Gil, 2010). These communication channels highlight the dominant ‘communicating to stakeholders’ approach where an organization as an expert distributes information to its external stakeholders with little to no stimuli for dialogue and cooperation (Kujala & Sachs, 2019; Passetti et al., 2019). In turn, workshops, meetings, and social media channels provide opportunities for more interactive and focused communication, such as creating discussions around specific issues and a sense of community (Turkulainen et al., 2015). These channels enable the ‘communicating with stakeholders’ approach that focuses on cooperation through dialogue (Brown, 2009; Vinnari & Dillard, 2016). For example, Twitter dialogues facilitate understanding of external stakeholders’ communication behavior that supports planning subsequent communication strategies in complex projects (Williams et al., 2015). Despite their potential for enabling dialogue, social media channels are often used for information dissemination purposes through appealing to external stakeholders, giving updates and information, promoting the project organization, and sending out targeted marketing (Ninan et al., 2019a; Zhang et al., 2018).

While scholars have advocated the benefits of the dialogic approach and communicating with external stakeholders (Bebbington et al., 2007; Brown, 2009; Kujala & Sachs, 2019; Vinnari & Dillard, 2016), understanding of the dialogic exchange potential of social media channels in external stakeholder communication is very limited, particularly in complex projects. Moreover, research into the role of social media channels in stakeholder communication is clearly in its infancy in the context of complex projects. The existing studies have focused on conceptualizing and describing the use of social media channels for communication purposes towards and with external stakeholders, instead of analyzing the communication and its effectiveness in detail. Against this background, studying the details and effectiveness of social media communication is relevant for developing a more nuanced and contextualized understanding of stakeholder engagement. To this end, the dissertation will explore the following RQ:
**RQ3: How does a project organization of a complex project communicate effectively in social media to engage external stakeholders?**

Figure 1 showcases how the above-derived three RQs are connected to the three dissertation articles (A1-A3). Figure 1 also illustrates their relationship to the overarching RQ and problem. The research problem and overarching RQ have been divided into RQ1-RQ3 by utilizing the three perspectives in reviewing existing stakeholder theory and research concerning stakeholder engagement. The A1-A3 directly address RQ1-RQ3 and ultimately provide knowledge to address the overarching RQ and problem. The horizontal grey arrows illustrate how the focus on addressing the overarching RQ and problem deepens when moving from the organizing perspective through the practice perspective to the communication perspective, offering connections among the A1-A3 and RQ1-RQ3. The organizing perspective offers a more top-down view on the dissertation phenomenon, while the communication perspective includes a more bottom-up view.

![Figure 1. The relationships among the research problem, research questions, and dissertation articles.](image)

**1.5 Methodology and research process**

The overall research strategy of this dissertation is case research (Ketokivi & Choi, 2014). Case study research\(^2\) is suitable since the overarching RQ and RQ1-

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\(^2\) “Case research” and “case study research” are used interchangeably to refer to the overall research strategy of this dissertation.
RQ3 seek to understand in-depth how and why external stakeholder engagement unfolds as a social phenomenon in complex projects (cf. Yin, 2015, p. 2). While founded on the same research strategy, the three articles employ different theoretical frameworks, types of case studies, modes of case research, logics of scientific reasoning, and use different data, methods, and analyses. To spare the reader from a lengthy explanation, Table 1 summarizes the case methodology used in A1-A3. Further details and reasoning are provided in Section 3.

**Table 1. Summary of the methodology used in dissertation articles.**

<table>
<thead>
<tr>
<th></th>
<th>A1</th>
<th>A2</th>
<th>A3</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Type of case study</strong></td>
<td>Holistic multiple-case study</td>
<td>Holistic single-case study</td>
<td>Embedded single-case study</td>
</tr>
<tr>
<td><strong>Case selection</strong></td>
<td>Replication logic: Literal replication</td>
<td>Longitudinal case rationale</td>
<td>Unusual case rationale</td>
</tr>
<tr>
<td><strong>Primary mode of case research</strong></td>
<td>Theory elaboration</td>
<td>Theory generation</td>
<td>Theory testing</td>
</tr>
<tr>
<td><strong>Theoretical framework</strong></td>
<td>Organizing as a problemsolving process and micro-structural approach to organization design</td>
<td>Stakeholder theory</td>
<td>Uses and gratifications theory</td>
</tr>
<tr>
<td><strong>Form of scientific reasoning</strong></td>
<td>Abductive</td>
<td>Inductive</td>
<td>Deductive</td>
</tr>
<tr>
<td><strong>Case(s)</strong></td>
<td>Lielahti-Kokemäki railway project</td>
<td>Tapiola district development project</td>
<td>Rantatunneli highway project</td>
</tr>
<tr>
<td><strong>Unit of analysis</strong></td>
<td>Complex project focusing on the organization and organizing of stakeholder engagement</td>
<td>Complex project focusing on the project organization’s stakeholder governance</td>
<td>Complex project focusing on the project organization’s stakeholder communication (embedded unit: social media message)</td>
</tr>
<tr>
<td><strong>Data</strong></td>
<td>Semi-structured interviews: 17</td>
<td>Semi-structured interviews: 27</td>
<td>Facebook Wall posts and comments: 824</td>
</tr>
<tr>
<td></td>
<td>Public project documents: 59</td>
<td>Public and company project documents: 200</td>
<td></td>
</tr>
<tr>
<td><strong>Data analysis</strong></td>
<td>Conventional content analysis and cross-case comparison</td>
<td>Thematic analysis</td>
<td>Multiple linear and generalized linear regression analyses</td>
</tr>
</tbody>
</table>

This dissertation is the outcome of a relatively lengthy exploration process and iterative learning journey searching for my own topic. While stakeholders and complex projects have been, more or less, the focus of this dissertation project from the beginning, the process began with multiple ideas, including, e.g., stakeholders, value creation, management of megaprojects, business networks, and product-organization interdependency. Hence, some other research projects were undertaken, and articles were written and published along the way that did not necessarily focus entirely on this dissertation phenomenon (see, e.g., Ahola et al., 2019; Lehtinen et al., 2019b; Peltokorpi et al., 2020). Therefore, those articles were not included in this dissertation as they were out of scope and focus.

The dissertation articles (A1-A3) were written in order A2, A1, and finally, A3. The initial idea for A2 came in fall 2016 after I had received my study right to pursue a doctoral degree. I interviewed some Tapiola project managers with
Karlos Artto, Tuomas Ahola, Kirsi Aaltonen, and Antti Peltokorpi, when somewhere there, Kirsi and then I started to think of an idea for a stakeholder perspective on Tapiola project. In Tapiola project, the project organization had utilized multiple distinct practices to interact with external stakeholders over the project lifecycle. Interestingly, it seemed that the project organization deliberately utilized certain practices in different project phases and towards specific stakeholder groups. Kirsi mentioned that there are not many longitudinal studies on the use of engagement practices and why certain practices are used at different times. Naturally, we became interested in understanding this phenomenon.

We jointly collected more data on Tapiola project and started crafting the theoretical framing and research design. At that time, I studied stakeholder theory, stakeholder engagement literature, and different methodologies to develop the initial research problem and RQ of my dissertation. Concurrently, I began analyzing the data and developing a manuscript by including Aaltonen’s and Rajala’s inputs. Together we prepared conference papers for IRNOP and EPOC conferences in summer 2017. After the valuable conference experience and feedback, I continued leading the paper towards an upcoming special issue in Industrial Marketing Management journal in late 2017. I focused my literature analysis on the practice perspective to understand the use of engagement practices in complex projects over time. We also conducted some additional interviews and finalized the data analysis before submission. After a few rounds of reviews and revising work, the paper got accepted in fall 2018.

In the interest of continuing our joint stakeholder research, the initial idea for A1 came from Aaltonen in fall 2018. At that time, I was a visiting postgraduate researcher at University of Leeds, UK, collaborating with Professor Giorgio Locatelli and his colleagues on other research topics related to corruption in projects and project management. Aaltonen had collected some interview data from two case projects, Lielahti-Kokemäki and Rantatunneli projects, and she told me that the projects had exciting features related to how multiple independent actors jointly organize stakeholder engagement. We began thinking about the framing and theoretical positioning to understand what conundrum in existing research we could address with such empirical data. I began studying the organizing perspective of stakeholder engagement literature.

Interestingly, it seemed that there were not many studies addressing the organizing of stakeholder engagement in inter-organizational contexts. We found out that any available insights were scattered across studies addressing different aspects of stakeholder engagement resulting in a limited understanding of the phenomenon. I further studied case study research and available methods and started to develop the research design for the study. I also gathered some additional data (open access documents) and analyzed the data during my stay in Leeds. We prepared a conference paper for EURAM conference in the summer of 2019. Although the conference was until next summer, we continued the research and studied organizing theories to develop the theoretical framing and approach. Eventually, we submitted the paper to the International Journal of
Project Management before the conference in spring 2019. After a few rounds of reviews and revising work, the article was accepted in late 2019.

Meanwhile, we came up with the idea for A3 as a continuation to complement the two other articles. We noticed that in the Rantatunneli project, the project organization had used social media as its primary stakeholder communication channel. While analyzing the stakeholder communication literature, we discovered that this phenomenon had not received practically any research attention, and we deemed it worthy of investigation. I started leading the process while still stationed in Leeds. I developed the theoretical framing, research design and gathered and analyzed the data while including Aaltonen’s inputs. A sudden opportunity came along in spring 2019, as we came across a call for a special issue in an international, peer-reviewed journal. Even though our research was still in its early stages, we decided to submit our research to this special issue with haste to attract great feedback. Considering the special issue’s tight schedule and our paper being quite far from publishable, our paper received a fair ‘reject and resubmit’ decision from the reviewers and editors. We started the revising work and studied communication theories to develop a new theoretical framing and approach. We prepared new manuscript versions for EURAM and IRNOP conferences for summer 2020, which were sadly postponed due to the coronavirus pandemic. Still, we continued developing the research and eventually resubmitted the article in summer 2020.

After my stay in Leeds, I began contemplating and envisioning this introduction part of the dissertation. At that time, I had three different options for the article constellations and related narratives for the introduction. The one presented in this dissertation and two others focused on either value creation or network relationships in complex projects. I tested and compared the alternatives and had lucrative discussions with my colleagues, supervisor Karlos Artto and instructor Risto Rajala. However, the more I thought about this, the clearer I started to see that these three articles (A1-A3) and the stakeholder narrative will be the ones forming my dissertation. It was early 2020 when I received the green light and started developing and writing this introduction part. I comprehensively studied stakeholder theory and research, case study methodology, and critical realist philosophy during the spring. While writing this introduction, I also revisited each article and empirical case to synthesize the findings. Finally, I received crucial feedback from my supervisor, instructor, and pre-examiners to finalize and submit the dissertation.

The above-described research process is summarized in Table 2.
Table 2. Chronological summary of the dissertation research process.

<table>
<thead>
<tr>
<th>Year</th>
<th>Theoretical research</th>
<th>Empirical research</th>
<th>Outcomes</th>
</tr>
</thead>
</table>
| 2016 | Developing the research problem and initial dissertation RQ related to stakeholders in complex projects  
Focusing on developing a general understanding of stakeholder engagement in complex projects  
Studying different methodologies and focusing on case study research | Data collection and preliminary analysis on Tapiola project | First paper drafts for EPOC and IRNOP conferences (A2) |
| 2017 | Further studying and analyzing stakeholder theory and research  
Focusing on the practice perspective of stakeholder engagement (A2) | Further data collection on Tapiola project and finalizing the analysis | Journal submission and revision of A2 |
| 2018 | Further studying case study research and different empirical research methods and analysis options  
Shifting the focus on understanding the organizing perspective of stakeholder engagement (A1)  
Publication of A2 |
| 2019 | Shifting the focus on understanding the communication perspective of stakeholder engagement (A3)  
Studying communication theories (A3) | Data collection and analysis on the Rantatunneli project’s social media account (A3) | Journal submission, revision, and publication of A1  
Submission and revision of A3, including EURAM and IRNOP conference versions |
| 2020 | Additional literature review on stakeholder theory, stakeholder engagement, and complex projects literature  
Studying critical realism and case study methodology further  
Envisioning, developing, and writing the introduction part of this dissertation | Further data analysis on the Rantatunneli project’s social media account (A3)  
Revisiting empirical cases and articles for the synthesis | Further revision and submission of A3  
Submission of the dissertation |

1.6 Dissertation outline

The rest of the dissertation is structured as follows. Section 2 offers a more detailed description of the theoretical background. First, the literature on complex projects is reviewed to develop a sufficient background understanding of the context. Next, stakeholder theory is studied to construct a required theoretical understanding of the research phenomenon and key concepts. Then, critical realism and critical realist view on stakeholder engagement are addressed to derive the three perspectives on stakeholder engagement. Next, the three perspectives are utilized to review existing theory and research concerning stakeholder engagement to elaborate and justify the identified knowledge gaps addressed in this dissertation through RQ1–RQ3. Lastly, the specific theoretical frameworks are derived that are used in A1–A3. Section 3 first explains and justifies the overall research methodology and then introduces detailed information of the article-specific research designs, data collection methods, and data analyses. Section 4 summarizes the primary findings from A1–A3 and then synthesizes the findings to address the overarching RQ. Section 5 discusses the findings in light of previous research to derive the theoretical contributions of this dissertation. Section 6 concludes the dissertation by scrutinizing the managerial implications, the research limitations, and avenues for future research.
2. Theoretical and conceptual background

2.1 Complex projects as research context

This subsection introduces complex projects as the research context by first addressing the background and definitions of complex projects and then putting special attention to relevant and necessary contextual characteristics and their implications related to the research phenomenon. Complex projects are introduced with a scope that offers a sufficient understanding of the research context.

2.1.1 Background and definitions

Complex projects, known initially as complex products and systems, can be defined as high-technology and high-cost business-to-business (B2B) capital goods used to produce goods and services for consumers and producers (Hobday, 2000). Complex projects include a plethora of interconnected and interacting parts, systems, and components, and they are tailor-made (unique) for specific purposes (Hobday et al., 2000). Due to the characteristics mentioned above, complex projects, as their name implies, are often produced as single projects, and the planning and production often take several years, if not even decades (Davies et al., 2017; Merrow, 2011). Complex projects are produced and delivered by a project-based organization that is temporal, flexible, reconfigurable, and formed by multiple autonomous actors such as owner, client, financiers, sponsors, contractor, subcontractors, and suppliers (Davies & Hobday, 2005, pp. 119-121). Many types of complex projects exist, and concrete examples include but are not limited to infrastructure, science, water and sanitation, energy, industrial and processing plant, and ICT projects (Flyvbjerg, 2014). These projects are often characterized as the necessary building blocks of the modern economy and society (Hobday et al., 2000; Merrow, 2011).

Complex projects are an analytical category (Hobday, 1998, 2000), and thus many synonyms that characterize these kinds of projects can be identified in the literature. For instance, major projects (Morris & Hough, 1987), large engineering projects (Floricel & Miller, 2001; Miller & Lessard, 2001), and megaprojects (Flyvbjerg, 2017; Söderlund et al., 2017) all share the central characteristics and definitions of complex projects despite their different labels. Analyzing the nomenclature and justifying the synonymy are out of the scope of this dissertation, but the labels and references can be used somewhat interchangeably. For the
sake of consistency, clarity, and purposes of this dissertation, the dissertation relies on the term complex projects but utilizes applicable references of the synonyms.

As was discussed in the introduction, external stakeholders can have significant positive and negative impacts on complex projects and their performance (Aaltonen et al., 2015; Cuppen et al., 2016; Fuentes et al., 2019; Di Maddaloni & Davis, 2017). Hence, stakeholder engagement has been recognized as paramount for enhancing the positive impacts while concurrently diminishing the negative impacts to ultimately ensure the success and value creation of complex projects (Aaltonen & Kujala, 2016; Mok et al., 2015; Winch, 2017). However, implementing stakeholder engagement is challenging, as it is complicated by the many contextual factors of complex projects (Eskerod & Huemann, 2014; Jepsen & Eskerod, 2009; Mok et al., 2015).

There are at least two ways to approach complexity, complexity in projects and complexity of projects (Cicmil et al., 2017). The complexity in projects is associated with studying projects through various complexity theories (Manson, 2001) to develop paradigms related to project management practice and research and better understand projects (Cooke-Davies et al., 2007). In turn, the complexity of projects is associated with studying the characteristics of projects that make the projects and their management complicated or otherwise challenging for the organizations to react (Geraldi et al., 2011). This perspective is normative in the sense that it seeks to address and understand the features of complex projects to devise best practices and guidance for achieving high project performance (Maylor & Turner, 2017). As the purpose of this dissertation is not to rely on complexity theories for developing novel project and project management paradigms but to understand the implementation of external stakeholder engagement in complex projects, the latter perspective is essential for the dissertation.

The complexity of projects perspective recognizes different complexity dimensions and how they influence project management and organizing. A relatively recent systematic review by Geraldi and colleagues (2011) identified and synthesized the many types of complexity to develop a five-dimensional framework of the complexity of projects. The dimensions are structural complexity, uncertainty, dynamic complexity, pace, and socio-political complexity. Shortly after, Maylor and colleagues (2013) revised the framework by testing its comprehensiveness and comprehensibility. Their theory-testing empirical research found out that the framework is comprehensive but not comprehensible, which led them to revise the framework. Maylor and colleagues (2013) made two essential adjustments. First, they included pace in structural complexity as pace cannot be considered an abstract concept with its indicators but fundamentally relates to the rate at which resources are utilized, being consistent with ideas in structural complexity (Maylor & Turner, 2017). Second, they combined uncertainty and dynamic complexity as emergent complexity because these two are very interconnected in that uncertainty at $t_n$ often leads to dynamic complexity at $t_{n+1}$ (Maylor & Turner, 2017; Maylor et al., 2013). The dimensions are interdependent, and they can relate to the project’s product, process, and organization.
2.1.2 Relevant characteristics for external stakeholder engagement

Structural complexity is often associated with the product’s complexity, meaning the many different interdependent and interacting parts, systems, and components that make up the project (Hobday, 2000). However, structural complexity is also associated with the process and organization. For instance, concerning the process, structural complexity can mean the myriad of interconnected actions and tasks required to produce the end-product (Chapman & Hyland, 2004; Green, 2004). Moreover, a structurally complex organization can mean a horizontally and vertically large, hierarchical organization requiring many interacting, specialized teams situated in different locations within different time zones and cultures (Geraldi & Adlbrecht, 2007; Maylor et al., 2008). Lastly, the iron triangle of complex projects, meaning the financial scale, long duration, and breadth of scope, are associated with structural complexity (Hobday, 1998; Hobday et al., 2000). Pace, referring to the rate at which a project is delivered (Geraldi et al., 2011), is foremost related to the structural complexity of the process, such as in the form of urgency and time criticality of achieving milestones and goals (Shenhar & Dvir, 2007, p. 13).

Structural complexity embodies some relevant issues for external stakeholder engagement. Regarding the process, the complexity associated with coordinating tasks and activities among different stakeholders within and outside the project organization at a relatively high pace is a relevant challenge for stakeholder engagement (Müller & Turner, 2007). Also, the organization’s structural complexity is a relevant issue for stakeholder engagement because there are many interdependent stakeholders involved, and the intensity of involvement fluctuates over time (Maylor et al., 2008).

Emergent complexity means the complexity stemming from the project’s uncertainty and dynamism (Maylor & Turner, 2017). Uncertainty regarding the product means the lack and ambiguity of information (or knowledge) related to the current and future states of each of the interconnected and interacting parts, systems, and components that form the project’s product (Geraldi et al., 2011). It also concerns the availability of information regarding the interactions and interconnections among the parts, systems, and components and their future impacts (Geraldi et al., 2011). Regarding the process, uncertainty can mean the availability of information required for executing tasks and actions timely (Maylor et al., 2008). As information is often transferred among the organizational units, it means that uncertainty can relate to coordination as well. Uncertainty related to the organization can mean a lack of information regarding the organization’s capabilities (Geraldi & Adlbrecht, 2007). In turn, dynamism can be defined as emergent changes that can concern the product, process, or organization (Geraldi et al., 2011). Changes in specifications, goals, systems, parts, technology, or their interdependencies are examples of a product’s dynamic complexity. In turn, changes related to the coordination of work, tasks, activities, and their interdependencies to complete the project are examples of process dynamics. Lastly, dynamic complexity regarding the organization can simply mean any kind of changes in the organizational setting.
Emergent complexity is relevant for external stakeholder engagement in the following ways. For example, uncertainty related to the organizational setting can mean the ambiguity of knowledge regarding stakeholders, their previous experience with projects, their (un)realistic expectations, and their understanding of the implications of the project (e.g., knowledge of technical, business, and project management issues) (Maylor et al., 2008). This uncertainty regarding stakeholders means that a project organization can have serious challenges identifying relevant stakeholders, not to mention their interests, expectations, and claims for the complex project (Missonier & Loufrani-Fedida, 2014). Dynamism also poses challenges for external stakeholder engagement in the form of complex projects’ dynamic organizational boundaries (Bakker et al., 2016; DeFillippi & Sydow, 2016), which means that stakeholders autonomously and unexpectedly come and go as the project progresses (Maylor et al., 2013). Also, stakeholders’ attributes change as the project proceeds (Lin et al., 2017); for instance, a previously unidentified stakeholder may become unexpectedly prominent (Maylor & Turner, 2017), complicating external stakeholder engagement.

Socio-political complexity means the complexity stemming from the social and political aspects of the organizational setting (Maylor & Turner, 2017), being highly relevant for external stakeholder engagement. Socio-political complexity is only indirectly related to the process and product. This complexity stems explicitly from the distinct interests, expectations, planning horizons, objectives, and goals of project actors that may be aligned or in conflict (Clegg & Courpasson, 2004; Geraldi et al., 2011). These complicate project management and organizing and especially stakeholder engagement (Geraldi & Adlbrecht, 2007; Maylor et al., 2008) because regardless of distinct interests and goals, the project actors must work together toward the shared and unique project objective for a restricted time with limited resources (Jones & Lichtenstein, 2008). The actors within the project organization can react in very different ways to stakeholders’ requirements due to their competing priorities and objectives (Aaltonen et al., 2015). Socio-political complexity thus also shares the large external environment of complex projects associated with the structural complexity (Maylor et al., 2013), which includes many external stakeholders whom all can have conflicting interests, expectations, and claims for a complex project (Aaltonen & Kujala, 2010; Davis, 2014), complicating the task of external stakeholder engagement.

The relevant complexity issues for implementing external stakeholder engagement in complex projects are summarized in Table 3.
Table 3. Relevant complexity issues for implementing external stakeholder engagement in complex projects.

<table>
<thead>
<tr>
<th>Structural complexity</th>
<th>Emergent complexity</th>
<th>Socio-political complexity</th>
</tr>
</thead>
<tbody>
<tr>
<td>High-paced coordination of activities among different stakeholders</td>
<td>Lack of knowledge concerning stakeholders</td>
<td>Stakeholders must work together toward the shared project goal, even though they have distinct interests, expectations, planning horizons, and objectives</td>
</tr>
<tr>
<td>A myriad of interdependent stakeholders whose involvement intensity fluctuates over project lifecycle</td>
<td>Significant challenges in identifying relevant stakeholders</td>
<td>Dynamic organizational boundaries</td>
</tr>
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<td></td>
<td>Dynamic organizational boundaries</td>
<td>Stakeholders change over project lifecycle</td>
</tr>
<tr>
<td></td>
<td>Stakeholders change over project lifecycle</td>
<td>Project actors may react very differently to stakeholders’ demands due to their divergent priorities</td>
</tr>
<tr>
<td>Broad external environment including a myriad of external stakeholders with divergent interests and expectations</td>
<td></td>
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</tr>
</tbody>
</table>

The brief literature analysis and Table 3 show that emergent and socio-political complexities introduce many relevant issues for external stakeholder engagement. Structural complexity, in turn, provides only a few issues. The reason might lie in the nature of the complexities. Structural complexity is mostly associated with complex projects’ internal complexities, including product and technology complexity, and complexity of project organization and organizing. In turn, emergent and socio-political complexities focus more on the external environment and complexity and how they interact with the structural and internal complexities. As external stakeholders form the external environment of complex projects by definition (Aaltonen, 2011), emergent and socio-political complexities are particularly relevant for external stakeholder engagement in complex projects.

2.1.3 Conclusions for empirical research

Due to the many types of complex projects and the limited scope of a dissertation project, it is not feasible to empirically investigate external stakeholder engagement in all possible types of complex projects. Hence, two feasible strategies emerge. First, investigate a few types comparatively to achieve more breadth and generalizability with the concurrent loss of depth, simplicity, and accuracy. Second, focus on one type of complex projects to achieve more depth, simplicity, and accuracy with the concurrent loss of breadth and generalizability. However, investigating a few types of complex projects does not still offer unproblematic generalizability to the whole analytical category of complex projects, as a few is not the same as all. Consequently, I chose to investigate the phenomenon in one type of complex projects. This choice also facilitates synthesizing the empirical findings from the three different perspectives on external stakeholder engagement because there is no need to compare and reconcile any contextual issues related to different types of complex projects.

A pivotal issue is to identify and choose a type of complex project where the phenomenon is particularly relevant and interesting. Since the complexity dimensions are generalized to the analytical category of complex projects, one needs to delve deeper into the characteristics of different types of complex projects to identify contexts where emergent and socio-political complexities are especially prominent. A useful way to approach this issue is to contemplate the
institutional contexts of different types of complex projects. I identified and selected infrastructure projects as a type of complex project where emergent and socio-political complexities play a significant role in external stakeholder engagement due to the institutional context characteristics.

Infrastructure projects are a type of complex project whose objective is to deliver public goods and services such as roads, tunnels, public transportation systems, and new districts (South et al., 2018; Yeo, 1995). These goods and services are delivered for and used by a category of stakeholders called end-users, who practically include members from a broad spectrum of other stakeholders, especially those from the external side (Martinsuo et al., 2019; Vuorinen & Martinsuo, 2019). Hence, external stakeholders have a crucial role in this institutional context, as these projects are initially set up to deliver value for them (Artto et al., 2016).

Another significant issue is that public sector actors have a crucial role in infrastructure projects, usually as clients and project owners, but always as regulators (Flyvbjerg, 2014; Locatelli et al., 2017; Morris & Hough, 1987). Infrastructure projects are thus delivered in an institutional context, where external stakeholders’ right of appeal is provided for by legislation and regulations governing public sector transparency and accountability (Di Maddaloni & Davis, 2018; Matinheikki et al., 2019; Mok et al., 2015).

Several important issues emerge from the institutional context of infrastructure projects that relate to emergent and socio-political complexities. First, due to the public sector transparency and accountability, many project plans and documents are open access, which means that external stakeholders have much information available on the nuances of infrastructure projects, and they are often aware of potential issues (Lee et al., 2017; Liu et al., 2018). Second, due to the regulations and legislation, external stakeholders have a relatively great power to express their interests and expectations and influence the planning and implementation of infrastructure projects (Cuppen et al., 2016; Di Maddaloni & Davis, 2017). Third, since external stakeholders are informed, and they have great power, it is likely that they autonomously exercise that power by means of influencing activities, such as boycotts, protests, appeals, and legal disputes that influence the delivery and performance of infrastructure projects (Aaltonen et al., 2010, 2015; Nguyen et al., 2019). Consequently, the institutional context plays a crucial role in the emergent and socio-political complexities of infrastructure projects, legitimizing and specifying requisite and broad engagement of external stakeholders.

2.2 Stakeholder theory as theoretical foundation

This subsection reviews the necessary foundations, assumptions, concepts, and background of stakeholder theory. These are revisited with the scope of providing a sufficient understanding and background regarding the concepts of external stakeholder and stakeholder engagement required for the empirical research.
2.2.1 Foundations and the theory in stakeholder theory

Although Freeman has been credited for popularizing the term stakeholder and being the father of stakeholder theory, the roots and idea for stakeholder theory originated in the 1960s in Stanford and Sweden. The term stakeholder was first introduced in an internal memorandum at the Stanford Research Institute in 1963, where stakeholders were defined as those groups without whose support an organization would cease to exist (Parmar et al., 2010). Independently, a Swedish organization researcher Rhenman (1964), used the term *interessent*, which freely translates to someone having an interest, throughout his volume called *Företagsdemokrati och företagsorganisation* that he later translated to English as *industrial democracy and industrial management* (Strand & Freeman, 2015). Rhenman (1964) described stakeholders as those individuals and groups who are dependent on the firm in order to achieve their own goals and on whom the firm is depending for its existence. In 1984, Freeman formally introduced the stakeholder concept in his seminal book called Strategic Management: A stakeholder approach. The paramount definition in his book follows that stakeholders are “all those groups and individuals that can affect, or be affected by, the accomplishment of the business enterprise. Each of these groups plays a vital role in the success of the business enterprise in today’s environment. Each of these groups has a stake in the modern corporation, hence, the term, stakeholder” (Freeman, 1984, p. 25). Concrete examples of stakeholders include, among other things, consumer advocates, competitors, media, employees, customers, environmentalists, non-governmental organizations, strategic interest groups, suppliers, governments, local community organizations, and owners.

As there can be practically an infinite number of stakeholder groups subject to empirical consideration and contextual idiosyncrasies, theorists have developed different classifications that help analytical treatment. Perhaps, one of the most utilized classifications is the division of internal and external stakeholders (Freeman et al., 2010, p. 105). Internal stakeholders are considered those stakeholders who have a formal, official, or contractual link to the organization, such as employees and managers in a firm (Savage et al., 1991). Conversely, external stakeholders are those stakeholders who do not have a formal, official, or contractual link to the organization but may affect or be affected by it (Eesley & Lenox, 2006). Examples in the context of firms include customers, NGOs, end-users, and communities.

The internal-external classification is by no means exhaustive. There is a myriad of ways to identify, define, and classify stakeholders, for instance, based on the form of claim or interest, nature of relationship or responsibility, or basis of legitimacy (Miles, 2017). Another often-used classification is the distribution to primary and secondary stakeholders, which is somewhat similar to the internal-external classification and sometimes even used slightly erroneously as a synonym (Freeman et al., 2010, p. 24). However, it is worth mentioning that any analytical classification for stakeholders is highly dependent on the empirical context. For instance, customers are often seen as external stakeholders in the context of firms (Savage et al., 1991), but in complex projects, they are often part...
of the project organization, thus being internal stakeholders (Winch, 2004). The
external-internal classification is the relevant conceptualization for the pur-
poses of this dissertation because it suits well with the research phenomenon
and context. The definition based on official, contractual, and formal link ena-
bles distinguishing clearly which stakeholders are part of the complex project
organization and which are external to it, facilitating analytical treatment and
thus the empirical analysis.

The stakeholder concept functioned as a foundation and impetus for the de-
velopment of the stakeholder view of the firm that essentially challenged and
questioned the shareholder, production, managerial, and altogether the neo-
classical views of the firm. Instead of seeing that the purpose of a firm is to create
value for its stockholders and manage relationships with only suppliers and cus-
tomers to achieve that purpose, Rhenman (1964) and Freeman (1984) urged
that firms have broader responsibilities in modern and turbulent business envi-
ronments that need crucial attention for an organization to survive. In the stake-
holder view of the firm, the primary purpose of a company is to create as much
value as possible for its stakeholders, which is argued not to contradict the value
creation to shareholders, because by creating as much value as possible to all
stakeholders, it also increases the value created to shareholders who are, by def-
inition, a stakeholder group among others (Phillips et al., 2019, p. 3). Despite
being initially founded in the context of firms, the stakeholder view, and stake-
holder theory for that matter, has been applied to many different organizational
contexts and in many disciplines (Laplume et al., 2008). The extensions beyond
the context of firms imply a stakeholder view of the organization where the pri-
mary purpose of any organization is to create value for its stakeholders.

The theory in stakeholder theory can be understood through any definition of
the stakeholder concept. On the one hand, the theory can be seen as a cause-
effect relationship where stakeholders affect the activities and decision-making
of an organization, and these stakeholders are vice versa affected by the organi-
zation’s activities and decision-making. On the other hand, the stakeholder
view of the firm can be understood as the central theory. The causal claim can
be interpreted so that if an organization creates value for its stakeholders, it
leads to its long-term survival. However, stakeholder theorists have argued that
the theory is not just one theory, but an integration of diverse narratives and
cause-effect relationships that has appeared from, and is subject to, different
interpretations and applications from corporate social responsibility and busi-
ness ethics to management, governance and finance (Gilbert & Rasche, 2008;
Miles, 2017, p. 437). For example, nearly 900 distinct conceptualizations for the
stakeholder term have been developed to serve specific purposes and relevant
contextual attributes (Miles, 2017). While scholars recognize this abundance as
richness, it is also a focal challenge for the theory, its development, and related
empirical research (Fassin, 2009; Orts & Strudler, 2009; Stoney & Winstanley,
2001).
There exist four interrelated assumptions that are commonly acknowledged as the foundation of any stakeholder theory. These are descriptive, instrumental, normative, and managerial theses, and they form the basis for theorizing about external stakeholders and their engagement.

The descriptive thesis tells us that at any given time, an organization is embedded in an environment consisting of other organizations, groups, and individuals, i.e., stakeholders, who have an interest in the organization's activities, and who can affect or be affected by the organization's activities (Jawahar & McLaughlin, 2001). The descriptive thesis explains the organization and its environment by addressing the past, present, and future states of affairs (Donaldson & Preston, 1995). The purpose of the descriptive thesis is to explain the organization and its stakeholders and how they behave and interact (Freeman, 1999).

The normative thesis connects stakeholder theory to theories of ethics and morals, such as utilitarianism (Jones & Wicks, 1999), deontology (Gibson, 2000), and feminine ethics (Burton & Dunn, 1996) to purport how an organization and its stakeholders should behave and interact. The thesis seeks to address what is ethical and morally righteous behavior in each context and situation (Hendry, 2001). The main argument of the normative thesis follows that all stakeholders are of intrinsic value (Donaldson & Preston, 1995). An organization should consider all stakeholders for their own sake in its activities and decision-making, not because of their instrumental value for advancing and reaching its own organizational objectives (Clarkson, 1995).

The instrumental thesis addresses the cause-effect relationships in the behaviors and interactions of an organization and its stakeholders. The thesis connects means to ends (processes to outcomes), meaning that specific organizational behavior and stakeholder interactions lead to certain outcomes (Jones, 1995). For instance, an organization's activities dedicated to managing the interactions and relationships with its stakeholders lead to or help achieve desired objectives and performance (Hillman & Keim, 2001).

The managerial thesis provides a pragmatist view and, in a way, integrates the three other theses. It does not merely explain situations, offer moral guidelines, or predict causation but focuses on managerial decision-making by bringing forward recommendations of attitudes, structures, and practices about stakeholders and their management (Donaldson & Preston, 1995). The essential argument here is that despite all stakeholders being of equal value, not all stakeholders could or should be equally involved and considered in all organizational activities (Phillips et al., 2003).

The four theses have received some criticism (Freeman, 1999), and other foundations for stakeholder theory have been developed (see, e.g., Jones & Wicks, 1999; Kaler, 2003; Steurer, 2006). The most notable is perhaps convergent stakeholder theory presented by Jones and Wicks (1999) that takes stock of social science and normative ethics approaches to combine instrumental and normative theses into a foundation for stakeholder theory. The alternatives share similarities with the four theses to a great extent, and one could argue that an
alternative view practically includes the same theses, but they are packed in a somewhat different format.

2.2.3 Concept of stakeholder engagement

Stakeholder engagement has become the concept describing how different organizations practice stakeholder theory (Kujala & Sachs, 2019). The concept itself is somewhat ambiguous and has been defined in many ways and approached from several perspectives (Greenwood, 2007). However, three categories can be derived where stakeholder engagement focuses either on 1) organization-stakeholder interaction, 2) organization’s agency, or 3) stakeholder’s agency. For instance, the definition can revolve around organization-stakeholder interaction, as Nolan and Phillips (2010, p. 40) put it, “…a type of interaction that involves, at minimum, recognition and respect of common humanity and the ways in which the actions of each may affect the other”. On the one hand, some approaches focus on organizations’ agency (i.e., a managerial view), as stakeholder engagement can be understood as the practice where an organization’s management considers stakeholders’ interests, expectations, objectives, relationships, and actions in its activities (Maak, 2007). On the other hand, other approaches focus on stakeholders’ agency, as stakeholder engagement can be defined as stakeholder’s psychological state (i.e., being engaged) resulting from stakeholder’s personal experiences with, e.g., an organization (Brodie et al., 2011). Essentially, stakeholder engagement is a multidimensional concept subject to empirical and contextual considerations (Brodie et al., 2019).

Freeman and colleagues (2017) sought to structure the vast definitions and approaches in the literature by devising a pragmatic and managerial framework with four overlapping themes about stakeholder engagement; examining stakeholder relations, communicating with stakeholders, learning with and from stakeholders, and integrative stakeholder engagement. Their framework is valuable, but it does not provide a simple definition for the concept that is usable in empirical research but rather a framework to practice stakeholder engagement. Hence, due to its variegated nature, the most commonly used definition is perhaps the one by Greenwood (2007, pp. 317-318): “…practices that the organisation undertakes to involve stakeholders in a positive manner in organisational activities”. Greenwood’s definition is broad yet straightforward, which provides leeway to scrutinize the different organizational activities that can be considered stakeholder engagement. Greenwood’s definition is deliberately managerial, viewing stakeholder engagement from a focal organization’s perspective, being suitable for this dissertation. The broad definition also has its weakness for theory development and empirical research because if stakeholder engagement is almost everything, it can quickly become nothing.

Notable in Greenwood’s definition is that it is value-laden because she defined that engagement is associated with a positive orientation toward stakeholders. Indeed, this notion is essential as it touches upon the moral and ethical side of stakeholder engagement, which is what several scholars of business ethics have after that elaborated (Behnam & Rasche, 2009; Foster & Jonker, 2005; Reynolds & Yuthas, 2008; Zakhem, 2008). From that elaborative discussion,
two trends and schools of thought of stakeholder engagement have emerged, strategic and moral engagement (Noland & Phillips, 2010).

Strategic engagement is seen as amoral because any stakeholder engagement that primarily seeks to fulfill an organization’s strategic purposes is not inherently concerned with maximizing value for all stakeholders (Rasche & Esser, 2006). However, the outcome of such strategic engagement is not necessarily perceived negatively by stakeholders, nor does it mean that an organization deliberately deceives or harms stakeholders (Noland & Phillips, 2010). However, it is certainly possible that this might occur. Strategic engagement can be seen as a continuation of the concept and practice of stakeholder management (Rasche & Esser, 2006). One could even argue that strategic engagement is the descendant of stakeholder management because stakeholder management, rooted in strategic management, is explicitly focused on maximizing an organization’s value capture through the management of stakeholders (Donaldson & Preston, 1995; Reynolds & Yuthas, 2008).

The idea of management of stakeholders focuses mainly on the instrumental benefits of managing stakeholder relationships. In other words, on the utility of managing stakeholders by using them as means and objects to desired organizational ends such as own objectives, goals, and value capture (Jones, 1995). Hence, the similarity between strategic engagement and stakeholder management is that they share a similar motive and outcome, the purpose and achievement of strategic interests. However, the critical distinction is that the means to do so differ. Strategic engagement is concerned with involving stakeholders in organizational activities and processes rather transparently, even though this can be practically symbolic (Foster & Jonker, 2005). In turn, stakeholder management implies strict boundaries to stakeholders, where an organization only attends to crucial stakeholder relationships and thus treats many stakeholders superficially and unfairly (Hillman & Keim, 2001; Savage et al., 1991).

Naturally, strategic engagement is rooted in instrumental thesis and specifically in its traditional sense, where certain stakeholder management activities lead to an increase in performance (Donaldson & Preston, 1995). However, strategic engagement is also rooted in the normative thesis (Noland & Phillips, 2010), as its instrumentality can be justified with utilitarianism. In brief, utilitarianism is concerned with determining right from wrong by focusing on outcomes, and its central purpose is utility maximization, often meaning the generation of the greatest good to the greatest number (Freeman, 1999). Although an organization’s strategic engagement does not necessarily focus on producing the greatest value for the greatest number of stakeholders, but instead on maximizing utility to itself, it can still consider all stakeholders’ interests relatively equally (Phillips et al., 2003).

Moral engagement argues that stakeholders’ ethical engagement should be a pivotal part of an organization’s strategy for two reasons. First, any unethical stakeholder engagement endangers the organization’s long-term survivability (Noland & Phillips, 2010), meaning that moral engagement is required for sus-
tainable value creation (Freeman et al., 2010, p. 282). Second, only moral engagement can fulfill the paramount proposition of stakeholder theory, that is, the aim of creating value for all stakeholders (Freeman et al., 2007).

Moral engagement is explicitly grounded in the normative thesis, particularly in deontological ethics (Gibson, 2000), as the transparent and genuine engagement of stakeholders is seen as the primary duty of any organization (Reed, 1999; Reynolds & Yuthas, 2008). In short, deontology is concerned with determining right from wrong based on actions and responsibilities rather than their consequences (Gibson, 2000). However, moral engagement is also rooted in the instrumental thesis because it connects means to ends offering causal reasoning; for example, involving stakeholders in organizational activities by ethical means leads to value creation for all stakeholders (Harrison & Wicks, 2013). Nevertheless, this should not be confused with strategic engagement and traditional instrumental connotation where stakeholders are treated as instruments for attaining egocentric purposes.

Moral engagement can be seen as a continuum to a specific stakeholder management approach, an approach called ‘managing for stakeholders’, also known as ‘management for stakeholders’ (Freeman et al., 2007). As its name implies, managing for stakeholders is an approach to strategic management, which stresses that an organization’s management needs to pay careful attention to its stakeholder relationships and how these relationships are managed so that value gets created for all stakeholders (Harrison et al., 2010). In short, this approach views an organization as an inclusive “forum for stakeholder interaction” (Evan & Freeman, 1993, p. 82). Some scholars have recently used the term ‘managing-with-stakeholders’, which resembles the same ideology as moral engagement, but the engagement can be considered more empowering (Signori, 2017). This observation implies that stakeholders’ inputs (interests, expectations, objectives) are duly noted and authentically and transparently incorporated in an organization’s decision-making as if the stakeholders were almost able to influence the organization’s management like shareholders (i.e., ‘co-manage’ the organization).

The notion of co-management takes back to what Goodpaster (1991) discussed about an organization’s multi-fiduciary duty. The multi-fiduciary duty implies that an organization’s management has a similar ethical and legal responsibility to its stakeholders as it has with its stockholders. By juxtaposing the fiduciary duties, Goodpaster (1991) coined the term stakeholder paradox, which means that a strategic approach (i.e., strategic engagement) would yield business without ethics and a multi-fiduciary approach (i.e., moral engagement) appears to yield merely ethics without (prolific) business. The paradox is also known as the separation thesis (or fallacy) in stakeholder theory, where ethics and businesses are dichotomized and treated in isolation from each other (Marens & Wicks, 1999). For instance, a business decision regarding stakeholders has no ethical content, and an ethical decision regarding stakeholders has no business content.

However, the essential idea of stakeholder theory is to reject the separation thesis altogether and depict business and ethics as a natural amalgamation (Freeman, 1994), which can be called the integration thesis (Freeman et al,
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2007). As Freeman (1994, pp. 5-6) wrote: “There is always a context to business theory, and that context is moral in nature. It is only by recognizing the moral presuppositions of business theory, refining them, testing them by living differently, and revising them that we can invent and reinvent better ways to live... I want to suggest how things would look if we dropped the idea that we can meaningfully talk about business and ethics by keeping the concepts, ideas and theories of each autonomous. In other words I want to suggest, it is not meaningful to talk about either stockholders or stakeholders without engaging in discourse that is at once normative, descriptive, instrumental and metaphorical”.

2.2.4 Conclusions for empirical research

It can be concluded that stakeholder engagement is concurrently strategic and moral, descriptive, normative, instrumental, and managerial – and most importantly, it is the **heart** of stakeholder theory, defining how stakeholder theory is practiced (Kujala & Sachs, 2019). Following the idea that stakeholder theory is encapsulated in the concept of stakeholder engagement, Wicks and colleagues (2019, p. 97) argued: “The ideas at the heart of stakeholder theory, and the larger narrative it enables, make stakeholder theory a powerful source for thinking about how people come together to cooperate and create value in a wide array of settings. Stakeholder theory ... has itself been shaped by ideas, rules, and structures that form the landscape of how businesses operate in particular communities and social contexts”.

Against all the above theory background, the paramount proposition follows that for developing stakeholder theory, there is a need to develop rich, empirical, and contextual understanding of stakeholder engagement where special attention is paid to relevant contextual conditions and attributes that serve specific purposes (Nartey, 2019). By developing more and richer narratives of stakeholder engagement, we can better understand and develop stakeholder theory. To afford this theory background section a venerable closure and justify the proposition, I quote Freeman (1999, p. 233): “… what we need is not more theory that converges but more narratives that are divergent—that show us different but useful ways to understand organizations in stakeholder terms”.

2.3 Critical realist view on stakeholder engagement

This subsection addresses the philosophical approach, critical realism, to the dissertation phenomenon. The basic assumptions and concepts of critical realism are reviewed with a scope that offers enough understanding to address stakeholder engagement as a social phenomenon.

2.3.1 Ontoepistemological grounds of critical realism

Critical realism is a philosophical approach to understand science. It suggests a stratified ontology, distinguishing the real, the actual, and the empirical domains (Bhaskar, 2013, p. 2).
The real domain is the static realm of objects (also known as entities) that can be social or material, and they have specific structures and causal powers, which mean the capacity to behave in different ways (Easton, 2010). The social and natural objects exist regardless of human understanding or observation (Sayer, 2000, p. 11). This means that the real domain is external and independent of human observers, which is an ontological feature shared by positivism. For instance, a project organization can be understood as an object in the real domain with structures (e.g., units, departments, personnel) and causal powers to behave in many ways, like organizing different project operations.

The actual is the domain where phenomena happen if and when the powers of objects are activated, resulting in events and effects (Sayer, 2000, p. 12). For example, a project organization behaves in the actual by activating its powers when it puts personnel to work in different project management areas.

The empirical domain is the strata of experience, where a researcher makes observations and experiences concerning either the actual or the real (Easton, 2010), but observations are dependent on if the researcher knows the real or the actual (Sayer, 2000, p. 12). For instance, a researcher may or may not see a project organization engaging external stakeholders because the researcher is limited in observing the empirical and theorizing the actual. That is, the researcher's ability to experience and explain how the project organization engages external stakeholders is limited.

Critical realism suggests that social phenomena must be understood instead of being measured or counted (Sayer, 2000, p. 17), implying that interpretation is always present. However, the difference to interpretivism is that critical realists accept causal explanations and the existence of an objective reality, the domain of real, unlike interpretivists who focus on understanding the social constructions that actors make, disregarding causal explanations (Easton, 2010). Nevertheless, an essential notion in critical realism is that a researcher can never completely understand the real or the actual entirely since human observations are fallible (Easton, 2010; Sayer, 2000, p. 18), which separates it from positivism. The above does not mean that the actual or real could not be observed, but that it may not always be capable of being observed (Easton, 2010). Researchers see only some parts of the real or actual, but it does not imply that the unobservable is not there or is not connected to what the researcher sees (Easton, 2010). Hence, theories of the actual are unlikely to provide a full understanding of any social issue and thus completely represent the real. Ideally, by studying a specific phenomenon more and more, the accumulated knowledge (empirical) and theory of the actual, for that matter, will asymptotically approach the real.

2.3.2 Causation in critical realism

Objects are the fundamental building blocks of causation that, as said above, have structures and powers in the domain of real. While structures can be understood as a nested set of internally related objects and practices, powers include the ability to cause events (Easton, 2010). For instance, a project organization can be understood as an entity that contains a nested set of other entities,
such as project actors, units, individuals with their specific attitudes, processes, resources, and activities. Project organization then possesses the abilities (powers) to engage external stakeholders in a complex project’s activities.

Events (also called outcomes) can be understood as the effects of powers, often described as observable behaviors of people, systems, and things as they occur, or as they have happened in the domain of actual (Easton, 2010). Critical realism pays special attention to processes that produce events (Easton, 2010). For instance, stakeholder engagement in complex projects can be understood as a process that ultimately leads to external stakeholders being engaged effectively in project’s activities.

How does a project organization exert its power to engage external stakeholders? The explanation is about identifying causal mechanisms and how they work, and if they have been activated, and under what conditions (Sayer, 2000, p. 14). As objects possessed the powers to cause something to happen, these powers, if activated, are causal mechanisms. In critical realism, mechanisms can be linear and nonlinear additive as in statistical models, logico-rational as in box and arrow diagrams, and also linguistic in nature and metaphorical (Easton, 2010). For example, a project organization’s ability to engage external stakeholders successfully can depend on its know-how to interact with specific external stakeholder groups. Suppose a project organization knows that the local community prefers dialogues to discuss project issues. In that case, it can engage the local community successfully by inviting its members into a workshop to discuss and resolve environmental and social issues.

In critical realism, specific mechanisms can produce different outcomes (Sayer, 2000, p. 15). Consequently, it is also possible that different mechanisms can produce the same outcome. Outcomes are not pre-determined, but instead, they depend on contingent conditions (Sayer, 2000, p. 15). Contingent conditions can be called contextual conditions or simply other mechanisms that influence the causation. For instance, the success (effectiveness) of engaging external stakeholders through specific engagement practices like workshops is contingent on contextual conditions, such as project phase (time), location (space), the controversy of stakeholder issues, and communication manners. Thus, social phenomena are embedded in open systems where specific mechanisms lead to specific outcomes depending on specific contextual conditions. A notable observation is that different mechanisms can have varying levels of power to cause events to happen, meaning that some contingent conditions play a more significant role in causing some event. Since investigating all possible contextual conditions of a phenomenon is not feasible, a crucial task is to identify relevant contingent conditions that influence the causation.

2.3.3 Critical realist view on stakeholder engagement

In this dissertation, stakeholder engagement was defined conceptually as a project organization’s managerial activity by referring to Greenwood’s (2007) definition of those practices that an organization undertakes to involve stakeholders in organizational activities. The adopted overarching definition for stakeholder engagement explicitly acknowledges (1) project organization as an entity that
seeks to engage external stakeholders and (2) organizational practices as the mechanism to achieve the outcome. Although the adopted definition does not explicitly recognize the role of other mechanisms or contingent conditions, such mechanisms have been addressed in many subsequent discussions following Greenwood’s approach. See for instance (Bebbington et al., 2007; Kaptein & Van Tulder, 2003; Kujala & Sachs, 2019; Vinnari & Dillard, 2016) regarding the role of communication manners in ensuring a desirable outcome of stakeholder engagement. Hence, I argue that a critical realist view matches well with the conceptual definition of the phenomenon in this dissertation, providing a suitable and well-justified ontoepistemological approach.

From a critical realist viewpoint, stakeholder engagement can be seen as a social phenomenon between two interacting entities, a project organization and its stakeholders embedded in the domain of real. Both project organization and stakeholders have their structures and powers to behave in many ways in the domain of actual.

In the domain of actual, the project organization exerts its powers through mechanisms known as engagement practices to engage external stakeholders in complex project’s activities. Engagement practices can include meetings, workshops, seminars, and other forms of interaction with external stakeholders. However, contingent conditions (i.e., other mechanisms) determine the outcome: how successfully (effectively) external stakeholders are engaged in the project’s activities. There can be many contingent conditions such as project phase and controversy of stakeholder issues, but many of these conditions are beyond the project organization’s influence or managerial control, and thus of limited relevance considering the adopted managerial perspective. Perhaps one of the most relevant other mechanisms is the communication taking place within the engagement practices. Clearly, communication can be influenced by the project organization but not entirely controlled because external stakeholders are autonomous actors with their own communication manners (Liu et al., 2018; Vuorinen & Martinsuo, 2019). Nevertheless, research has shown that an organization’s communication manners play a pivotal role in determining the interaction outcomes between the organization and its external stakeholders (Kaptein & Van Tulder, 2003; Kujala & Sachs, 2019; Turkulainen et al., 2015), thus also likely determining the outcome of stakeholder engagement. Therefore, the project organization’s communication, including, e.g., what is being discussed, how, and why, are central other mechanisms determining whether external stakeholders are effectively engaged in complex project’s activities.

Consequently, three elements of stakeholder engagement can be extracted by following the critical realist view of causation, project organization (entity), engagement practices (mechanisms), and communication (contingent conditions/other mechanisms). The three elements, depicted and summarized in Figure 2, can be used as perspectives to approach the phenomenon in more detail.
2.4 Theory and research on stakeholder engagement

This subsection reviews existing stakeholder theory and research concerning stakeholder engagement from the three derived perspectives by gradually developing the focus on external stakeholders and complex projects. The purpose
is to uncover what is known and not known about the phenomenon and then elaborate and justify the identified knowledge gaps.

2.4.1 Organizing perspective

In the context of a single organization, the organizing of stakeholder engagement can be described as a continuous process of organizing and integrating stakeholders’ values, interests, and rights into the organization’s activities and decision-making (Hummels, 1998). Hummels (1998) suggested that the process includes establishing goals for engagement, considering stakeholders’ interests, measuring performance in light of the goals, verifying and disclosing the outcomes of engagement, and continuously developing the process.

Baumann-Pauly and colleagues (2013) specified that the organizing process includes three dimensions, commitment, internal structures and procedures, and external collaboration. Commitment means that the organization has relevant and formal indicators, such as codes of conduct and policies in place that demonstrate the organization’s commitment to stakeholder engagement (Baumann, 2009). Additionally, commitment can be reflected in owners’, managers’, and other personnel’s attitudes and rhetoric about engagement issues (Baumann-Pauly et al., 2013; Wickert, 2016). In turn, internal structures and procedures mean that the organization has specific functions, departments, teams, and other specialized organizational roles established with the responsibility of executing both formal and informal activities and arrangements associated with stakeholder engagement (Yuan et al., 2011). These structures and procedures also include incentive systems and training measures for personnel to promote awareness of issues related to stakeholder engagement (Baumann-Pauly et al., 2013). Lastly, external collaboration captures the quality of relationships and interaction with stakeholders and specifically with external stakeholders, ultimately meaning external stakeholders’ engagement in the organization’s activities (Wickert, 2016).

Expanding the view from a single organization and dyadic stakeholder relationships toward inter-organizational contexts, Rowley (1997) utilized social network analysis and suggested the need to understand networked stakeholder relationships and how they influence organizing. Although pioneering, Rowley’s (1997) work still assumed that instead of a collective of organizations, a single organization (firm) is at the center of the network, which can be seen as the actor who organizes stakeholder engagement. Building on Rowley’s network perspective, Frooman (2010) developed the issue-network idea where instead of a single organization, an issue is at the core of the network with stakeholders. His theoretical work enables placing a collective of organizations and their joint organizing activities as issues at the center of their respective stakeholder network. The issue-network is a crucial enabler for understanding the organizing of stakeholder engagement in inter-organizational contexts because, in inter-organizational contexts, such as complex projects, a mutual understanding of coordination trajectories among a collective of organizations working toward a shared objective is central to guarantee that stakeholder engagement is organized appropriately and coherently (Gable & Shireman, 2005; Jones &
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Lichtenstein, 2008). Nevertheless, such analyses are virtually non-existent in previous research, significantly hindering the understanding of how multiple organizations together organize external stakeholders’ engagement in inter-organizational contexts, including the three dimensions of commitment, internal structures and procedures, and external collaboration.

In the field of complex projects and project management, stakeholder research has depicted the organizing of stakeholder engagement as a continuous management process. This stream of research has especially emphasized external stakeholders as the target group of stakeholder engagement (Derakhshan et al., 2019b; Di Maddaloni & Davis, 2017; Mok et al., 2015). The process is proactive, including continuous planning and management of the responsibilities, roles, and activities for stakeholder engagement (Eskerod et al., 2015; Oppong et al., 2017).

Much emphasis has been put on the role of project managers, who are typically presumed to be in charge of devising plans for stakeholder engagement (Di Maddaloni & Davis, 2018; Ninan et al., 2019b), identifying and classifying stakeholders (Aaltonen, 2011; Olander & Landin, 2005), analyzing the stakeholder landscape (Aaltonen & Kujala, 2016), and managing interfaces and relationships with stakeholders (Gil, 2010). The research has shown that project managers may often rely on different frameworks, guidelines, and tools such as the stakeholder circle that facilitate their work (Bourne & Walker, 2008). Also, project managers are typically assumed to be responsible for planning different engagement strategies such as compromising strategy where project managers listen to stakeholders’ claims and offer compromises through negotiation and dialogue (Aaltonen & Sivonen, 2009). The selected strategies then reduce to specific organizational arrangements and activities that are allocated to dedicated project personnel (Yang et al., 2011). The practices may include for instance workshops and face-to-face discussions, working groups, and phone meetings, information evenings, different seminars and other roundtable discussions (Eskerod et al., 2015). Interestingly, existing research has not often specified the project managers’ parent organization. That is, whether the project manager is from contractor, client or owner side for example, which hinders understanding the details of the organizing process.

In addition to project managers, research has provided some evidence of other roles and activities. For instance, project owners are often required to allocate resources to stakeholder engagement (El-Sawalhi & Hammad, 2015), and they typically manage relationships specifically with authorities (Aaltonen et al., 2008). Moreover, some research notes the project management team as the active agent in organizing stakeholder engagement (Ninan et al., 2019a). Other research has touched upon clients’ capabilities and responsibilities, for instance, meaning that they oversee the overall planning and engage specifically end-users (Mok et al., 2017b, 2017a). However, the research has remained relatively silent about many typical roles in complex projects, such as suppliers’ and designers’ roles.

Some empirical research has argued the need to look beyond a single organization’s roles, responsibilities, and activities, noting the potential for examining
and understanding the collective organizing of stakeholder engagement, especially in situations where the project organization encounters unexpected stakeholder events (Aaltonen et al., 2010).

Granted that the need to examine the organizing beyond the boundaries of a single organization has been acknowledged, the existing research widely dismisses issues of the inter-organizational context. Although insights can be gathered from research related to other issues of stakeholder engagement, as shown above, the issue of organizing has seldom been looked at comprehensively or beyond the project managers’ role. While other roles such as owners and clients have been discussed to some extent, the agency and responsibilities are all treated in isolation to single organizations, limiting understanding of how multiple organizations jointly organize stakeholder engagement, which can be considered paramount in the context of complex projects (Gable & Shireman, 2005; Jones & Lichtenstein, 2008). Moreover, previous research has not elaborated the three dimensions of commitment, internal structures and procedures, and external collaboration in the context of complex projects.

Extant research provides a restricted view to address the organizing of stakeholder engagement in complex projects as it takes for granted the three dimensions and the details and practice of distributing responsibilities, roles, and activities among multiple organizations. Consequently, examining how multiple organizations, forming a project organization, organize external stakeholder engagement jointly in the context of complex projects is relevant for developing a more nuanced and contextualized understanding of stakeholder engagement.

2.4.2 Practice perspective

The different reasons for stakeholder engagement, including instrumental (Mitchell et al., 1997), resource-dependency (Frooman, 1999), identity-based (Scott & Lane, 2000), institutional (Orr & Scott, 2008), value creation (Eskerod & Ang, 2017) and moral reasoning (Freeman et al., 2007) are the basis for the practice perspective and use of different engagement practices. These reasons are ideal types and mutually non-exclusive, as it would be misleading to argue that an organization would only have one reason to engage all its stakeholders.

In instrumental reasoning, an organization focuses on its performance outcomes and value capture and utilizes stakeholders as instruments for achieving its own objectives (Donaldson & Preston, 1995). For instance, Aaltonen and Kujala (2016) showed that one primary reason to engage stakeholders in the context of complex projects was to achieve project efficiency and short-term indicators such as staying in schedule, budget, and scope. The above is very similar to resource-dependency reasoning, in which stakeholders are seen as useful resources and valuable informants for the organization’s purposes (Frooman, 1999). For example, the disengagement of stakeholders who do not possess crucial information or resources for the project’s progress is considered justified since engaging those stakeholders is not beneficial for the complex project’s survival (Eskerod et al., 2015). In these two views, an organization prioritizes and balances key stakeholders’ requirements and interests in a way that secures the achievement of its objectives (Mitchell et al., 1997). The previous means that the
interaction is rather unilateral as the organization selectively engages specific stakeholders when it suits its purposes, emphasizing the decision-making boundaries between the organization and its stakeholders.

Identity-based reasoning informs us of the role that stakeholder engagement may have in forming organizational identity (Scott & Lane, 2000). Organizational identity may be defined as a set of shared beliefs between the organization and its stakeholders about the organization’s essential characteristics (Albert & Whetten, 1985). The previous means that stakeholders who do not share similar beliefs of the organization’s central characteristics may be considered risks and opponents, and for avoiding conflicts with those stakeholders, they ought to be engaged either symbolically or disengaged (Aaltonen & Kujala, 2010; Rowley & Moldoveanu, 2003). On the other hand, stakeholders who share similar beliefs may be seen as valuable contributors, and they can be engaged to reinforce prevailing, desired identity or even help construct a new desirable identity (Scott & Lane, 2000).

The co-creation of desired organizational identity with stakeholders relates to institutional reasoning (Derakhshan et al., 2019a; Orr & Scott, 2008), where stakeholder engagement is seen to have a role in the formation of organizational legitimacy and reputation. Like identity-based reasoning, the engagement can be understood as symbolic, as stakeholders are engaged and disengaged to maintain organizational legitimacy and reputation. For instance, stakeholder engagement is an established and recognized practice in the institutional context of complex projects (Bayiley & Teklu, 2016; Oppong et al., 2017). The previous means that stakeholder engagement is an expected convention and organizations tend to practice it regardless of any associated benefits. However, this does not mean that there would or could not be any benefits, but the reason for engagement comes from the institutional pressure.

In value creation reasoning, as its name implies, stakeholder engagement has a pivotal role in enabling value creation and system-wide benefits (Eskerod & Ang, 2017). In this view, an organization focuses on establishing cooperation with stakeholders, especially with external stakeholders who are depicted as valuable means and ends of engagement (Meynhardt et al., 2016; Reypens et al., 2016). Stakeholders are seen as enablers and proponents, and they are engaged authentically in activities, meaning a type of engagement where stakeholders may genuinely affect the organization’s decision-making (Eskerod et al., 2015). For instance, in complex projects, stakeholder engagement is a mechanism to generate and deliver valuable outcomes, such as specific services and products that benefit a wide range of stakeholder, including the organization itself (Artto et al., 2016; Davies & Mackenzie, 2014; Fuentes et al., 2019). Moreover, in new product development projects that are a type of complex projects, stakeholder engagement plays a crucial role in developing and disseminating new ideas and innovations that benefit both stakeholders and the organization (Aarikka-Stenroos et al., 2017).

In moral reasoning, stakeholder engagement is based on the normative thesis and business ethics (Gibson, 2000). From this view, stakeholder engagement is seen as gratuitous, which means that stakeholders are engaged in organizational
activities for their value and not because of expectations of some benefit in return (Freeman et al., 2007). Hence, stakeholder engagement is seen as a central responsibility of any organization in any context. However, while stakeholders are of equal value, not all stakeholders should or could be feasibly engaged equally in organizational activities (Phillips et al., 2003), especially in the context of complex projects, where resources for engagement are limited both in quantity and time (Di Maddaloni & Davis, 2018).

The reasons for engagement function as a basis for developing specific engagement strategies, which are devised, adjusted and differentiated according to target stakeholders’ attributes (Eskerod & Vaagaasar, 2014; Harrison et al., 2010; Hillman & Keim, 2001; Juntunen et al., 2019; Ninan et al., 2019b; Savage et al., 1991). The purpose of engagement strategies is two-fold, to engage stakeholders in organizational activities and influence them or their subsequent behavior (Savage et al., 1991).

Research in the context of complex projects has provided vast understanding of the use of different strategies for engaging stakeholders, such as keep informed and keep satisfied (Olander & Landin, 2005), or adaptation, compromising and influencing strategies (Aaltonen & Sivonen, 2009). The strategies can be based on frameworks such as the power-interest (Johnson & Scholes, 1999) and salience-position (Aaltonen et al., 2015) matrices, and the stakeholder circle (Bourne & Walker, 2008), that are first used to identify stakeholders and analyze their attributes, and then to develop suitable engagement strategies respectively (Aaltonen, 2011; Aaltonen & Kujala, 2016).

However, choosing the right strategies timely is not trouble-free but an iterative and experimental interaction process with stakeholders (Missonier & Loufrani-Fedida, 2014). For example, research in complex projects has shown that strategies for engaging external stakeholders can emerge in the empirical setting through stakeholder interaction without the conscious use of any particular framework (Ninan et al., 2019b). The use of strategies is not static but evolves (Missonier & Loufrani-Fedida, 2014), as Aaltonen and colleagues (2015) showed in their case study where engagement strategies consisting of active and early dialogue turned an opposing external stakeholder into a neutral one. Their analysis also demonstrated how engagement strategies influence external stakeholders’ attributes and behavior.

Many of the available engagement strategies focus on supporting the organization’s own goal achievement and can be considered instrumental in their nature. However, the reasons and motives for using specific engagement strategies have not received much research attention, especially in the context of complex projects.

The engagement strategies are enacted through engagement practices that include various organizational activities and arrangements where the interaction with stakeholders occurs. Stakeholder research has documented a plethora of different practices in different contexts. For instance, a recent book edited by Freeman and colleagues (2017) offers nearly two dozen case studies of different aspects of stakeholder engagement from which a myriad of different engagement practices can be identified.
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The different kinds of practices influence stakeholders’ level of engagement and vary in the level at which they seek to engage stakeholders (El-Gohary et al., 2006). For example, in the context of complex projects, activities such as workshops, visits, meetings, phone calls, roundtable discussions, and focus and working groups enable an in-depth, two-way interaction with external stakeholders that can facilitate higher levels of engagement (El-Gohary et al., 2006; Eskerod et al., 2015; Eskerod & Huemann, 2014; Helin et al., 2013). On the other hand, information evenings and seminars, public hearings, surveys, press releases, media outreach, notifications, bulletin, leaflets, articles, and websites are suitable for information dissemination, highlighting the role of one-way interaction from an organization to its external stakeholders where stakeholders’ level of engagement can be considered lower (El-Gohary et al., 2006; Eskerod et al., 2015; Eskerod & Huemann, 2014; Gil, 2010). Nevertheless, the role of time has often been neglected as processual investigations of how specific practices are enacted over time are surprisingly limited, particularly in complex projects.

Research has also shed light on stakeholders’ motives and strategies (Frooman, 1999; Rowley & Moldoveanu, 2003). For instance, in complex projects, stakeholders’ motivation to engage can be determined by their perceived ability to influence the project and whether their influence can lead to any outcomes, and if so, are the outcomes desirable or not (Purvis et al., 2015). This perception also defines whether a stakeholder opposes or supports the project. Additionally, external stakeholders’ expectations of complex project’s value creation such as environmental, social, financial, and systemic value can explain the use of specific influence strategies like complaining and resolving or relying on decision-making authority (Vuorinen & Martinsuo, 2019). In line with the value expectations, interests such as benefits to the public, characteristics of project performers, the layout of projects, living quality of the public, perceptions of the public, and influence from the authority can determine why individuals and communities may engage in harmful actions against complex projects (Liu et al., 2018).

Regarding strategies, stakeholders may seek to increase their power, legitimacy, and urgency to be recognized and engaged in a project (Aaltonen & Kujala, 2010). For example, empirical research has found evidence regarding strategies of direct and indirect withholding, resource and coalition building, conflict escalation, credibility building, communication, and direct action (Aaltonen et al., 2008, 2015). Some combinations of these strategies might be particularly effective, such as communication and credibility building, direct action and conflict escalation, and coalition building and communication (Nguyen et al., 2019).

There is a wealth of research into an organization’s reasons, strategies, and practices for engagement. However, decisions regarding when to engage particular stakeholders, and why, are very challenging and debated continuously among researchers, especially in the field of complex projects (Eskerod et al., 2015). The research on the timing of external stakeholder engagement focuses almost invariably on the early lifecycle phases of complex projects (Aaltonen et
al., 2015; Heravi et al., 2015). For example, some research shows that transparent and broad engagement of external stakeholders already in the early lifecycle phases of a complex project contributes to the project’s performance since every stakeholder’s views, expectations, interests, and objectives can be incorporated into the project’s objectives and success definitions (Davis, 2014, 2017; Missonier & Loufrani-Fedida, 2014). However, scholars have noticed that a boundaryless and broad engagement of external stakeholders can be too costly, resource-intensive, and result in challenges and impasses in decision-making during the early lifecycle phases (Aaltonen & Kujala, 2010). Hence, in complex projects, many external stakeholders are disengaged to ensure the project’s timely progression during the early lifecycle phases (Flyvbjerg, 2014). Some researchers have also contemplated the timing of stakeholder engagement during the mid-lifecycle phases (i.e., execution and implementation phases). These scholars suggest that external stakeholders can be ignored and disengaged, as significant decisions have been already locked in for the project, and it is wise to protect the project from external disturbances (Lundin & Söderholm, 1995) since any changes during project implementation would be too costly and painful (Flyvbjerg et al., 2003, p. 86).

Timely engagement and disengagement of external stakeholders can be considered a salient feature of managing a complex project. However, the existing research has not paid much attention to the timing of external stakeholder engagement apart from the early lifecycle phases, and frankly, many studies ignore time and timing completely. Although, some empirical studies have touched on the subject of timing beyond the early life cycle phases (Ninan et al., 2019b; Yang et al., 2018). Still, the engagement is portrayed as relatively static, and reasoning relies on the theoretical reasons and analysis of external stakeholders’ attributes instead of associating the timing and reasoning to the context of the evolving multi-stakeholder system where different stakeholders enter and exit the system over time (Bakker et al., 2016; DeFillippi & Sydow, 2016). The inter-organizational and dynamic stakeholder context of complex projects complicates the timing of engagement and disengagement significantly because, unlike in the traditional stakeholder models, the engagement and disengagement practices are not devised by a single organization with dyadic stakeholder relationships. Instead, the practices emerge from the networked interactions of external and internal stakeholders over time. Therefore, understanding how and why external stakeholders are engaged and disengaged over the complex project’s lifecycle is lacking. Consequently, examining the temporal dynamics and reasoning of stakeholder engagement and disengagement over the complex project’s lifecycle is relevant to develop a more contextualized and nuanced understanding of stakeholder engagement.

### 2.4.3 Communication perspective

From the communication perspective, the different engagement practices can be considered as communication media where organizations and their stakeholders communicate. Communication can be defined as an indirect and direct discussion between an organization and its stakeholders (Kujala & Sachs, 2019).
Two primary communication modes can be distinguished in stakeholder communication, communicating to and with stakeholders (Freeman et al., 2017). The two are also known as stakeholder debate and stakeholder dialogue, respectively (Lehtimaki & Kujala, 2017). Stakeholder debate implies that an organization speaks to influence stakeholders and their behaviors and sees itself in competition with them (Kaptein & Van Tulder, 2003). In debate mode, organizations defend and confront their agenda to achieve their organizational goals and purposes (Kujala & Sachs, 2019). Stakeholder dialogue then indicates that organizations give stakeholders a voice and listen to their concerns, focusing on emphatic collaboration (Lehtimaki & Kujala, 2017). In dialogue mode, organizations look for mutually beneficial outcomes by being constructive and exchanging interests, opinions, and expectations with stakeholders (Kaptein & Van Tulder, 2003). In general, stakeholder theory recognizes the strengths of stakeholder dialogue in effective stakeholder engagement (Bebbington et al., 2007; Vinnari & Dillard, 2016).

In complex projects, multiple external stakeholders’ distinct requirements need to be considered in projects’ decision-making to secure the achievement of both operational and social performance (Maylor & Turner, 2017). Thus, stakeholder communication plays an essential role in this context, as direct and indirect conversations enable understanding of external stakeholders’ requirements (Butt et al., 2016). However, complex projects are temporal endeavors, which means that there are limited windows for communicating to and with external stakeholders (Burke & Morley, 2016). Besides, external stakeholders’ requirements and concerns may change over the project’s lifecycle (Aaltonen & Kujala, 2010), introducing unpredictability and uncertainty into stakeholder communication (Maylor & Turner, 2017). Thus, proactive and constant communication with external stakeholders may be required for successful stakeholder communication (Derakhshan et al., 2019b; Unterhitzenberger et al., 2020).

Stakeholder communication has been approached primarily from a contingency view, meaning that a complex project organization must plan its stakeholder communication channels according to the equivocality and uncertainty of information that needs to be processed to different stakeholders (Monteiro de Carvalho, 2013). The previous means that the type and use of a communication medium influences the richness and amount of information that can be communicated, implying that the organization must balance the depth and breadth of stakeholder communication due to its limited resources (Daft & Lengel, 1986). The depth of communication can be understood as the intensity with which an organization communicates with a single stakeholder. In turn, the breadth of communication can be defined as the extent to which an organization communicates with multiple stakeholders.

Traditional communication media such as websites, notifications, press releases, bulletins, leaflets, media outreaches, and articles are appropriate for reaching the breadth of communication as these channels facilitate general information dissemination to a vast number of external stakeholders (Gil, 2010). Due to their nature, conventional media channels can be associated with stake-
holder debate because they practically enable only communicating to stakeholders due to the lack of interaction element. Traditional communication media may be utilized to influence external stakeholders by convincing and defending the organization’s agenda. The communication content in these media is often characterized as formal.

Collaborative media such as meetings, workshops, and seminars are suitable for achieving the depth of communication and building relationships with specific stakeholders (Kokkonen & Vaagaasar, 2018). Also, communication with stakeholders in virtual collaborative spaces has been shown to enhance cooperation, relationship and trust-building, and problem-solving and learning (Alin et al., 2013). These media are generally associated with stakeholder dialogue, as they enable interaction and communication with stakeholders. Nevertheless, they may be limited in their ability to reach the breadth of communication. These communication media are suitable for sharing and listening to stakeholders’ viewpoints constructively and discussing any issues to find compromises and mutually beneficial outcomes. Existing research has shown that informal communication, content, and dialogue play a significant role in these collaborative media for developing trust and building relationships with stakeholders (Aaltonen & Turkulainen, 2018; Chakkol et al., 2018).

Increasingly, project organizations of complex projects use social media, including but not limited to Twitter and Facebook, for communicating to and with stakeholders. Empirical examples from the United Kingdom show how High Speed 2 and London Crossrail project organizations have actively utilized their official Facebook and Twitter accounts to disclose information and open discussions with their social media stakeholders about the project’s progress, plans, decisions, and interruptions, all of which might have even affected public opinion. Research in other contexts such as marketing (Dolan et al., 2016, 2019) has explored social media channels’ role in stakeholder communication, but this issue has not yet attracted much research attention in complex projects research.

Social media are Web 2.0-based applications, such as Facebook, Twitter, Instagram, and YouTube. They are computer-mediated technologies that enable creating and sharing different kinds of information, such as text, audio, graphics, pictures, and video, in virtual communities and networks (Kietzmann et al., 2011). Due to their nature, social media enable both communicating to and with stakeholders, and thus they have become increasingly popular among different organizations and their stakeholders. For example, companies have acknowledged that using social media channels for stakeholder communication through marketing, stakeholder-based innovation, and general collaboration enhances organizational performance and success, such as improvements in sales, innovation outcomes, corporate image, and stakeholder loyalty (Wang et al., 2016).

Through rapid information dissemination and exchange, social media channels are an effective and efficient means of reaching a wide range of stakeholders, especially external stakeholders for whom the channels are a natural way to communicate (Lovejoy et al., 2012)—thus facilitating the achievement of the
breadth of communication. For instance, business organizations can communi-
cate to a broad range of customers through Facebook posts and Twitter tweets
about new announcements, products, upcoming sales, and campaigns that can
ehance brand awareness and increase sales (Ashley & Tuten, 2015). Com-
panies can also disclose information about other issues, such as financial trans-
parency and environmental and social issues, increasing firms’ reputation (Lee
et al., 2013; Manetti & Bellucci, 2016). For enhancing communication, firms can
use cutting-edge, multi-media visualizations, celebrities as brand ambassadors,
and other emotional and logical appeals (Ashley & Tuten, 2015; Viglia et al.,
2018). Research has also shown that governmental organizations utilize Face-
book and Twitter to inform local communities about upcoming events in their
areas, attracting more followers and contributing to active and increased partic-
ipation in public sector activities (Bonsón et al., 2017). Some research has also
explored how NGOs use Facebook and Twitter to share information and raise
awareness about various social and environmental issues, attracting more fol-
lowers (Abramson et al., 2015).

Organizations also use social media for two-way, interactive communication,
that is, for dialogues to accumulate and exchange knowledge (Lovejoy & Saxton,
2012), facilitating the achievement of the depth of communication. For exam-
ple, firms may utilize the interactive features of social media for customer-based
innovation and new product development, as customers can be asked to cast
votes about new product features through social media reactions and com-
ments. Additionally, firms can arrange different kinds of social media competi-
tions in which participants (stakeholders) generate user-based content to win
prizes, like new products. Rapid product development rates and accumulation
of collective knowledge and innovations enable ideas to develop dynamically
through these social networks (Martini et al., 2014). For instance, external ac-
tors can communicate with each other in the social media communities to solve
the organization’s problems, develop novel ideas, and even co-create innova-
tions, being a relevant source of value for the organization. Research has also
demonstrated that governmental organizations utilize Facebook’s Wall posts
and comments to communicate with local communities about public sector de-
development (Gálvez-Rodríguez et al., 2018). In turn, NGOs engage in active dia-
logues with their social media communities about mission-related issues (Zhou
& Pan, 2016). These organizations invite questions and feedback from their
community stakeholders, mobilizing them and offering them contributor roles
to work collaboratively, solve problems, generate new ideas, and even develop
innovations (Cho et al., 2014; Zhou & Pan, 2016).

Research in complex projects has offered some preliminary findings regarding
the role of social media in stakeholder communication. For example, some pro-
ject organizations have used Twitter to provide progress updates, appeal to ex-
ternal stakeholders, deliver targeted marketing and promote the project organ-
ization, facilitating to construct a positive brand image and support for project
activities (Ninan et al., 2019a). A project organization can also utilize Twitter to
understand the external stakeholder network and stakeholders’ online behavior,
which helps plan the following communication with specific stakeholders
Theoretical and conceptual background

(Williams et al., 2015). In addition to Twitter, some project organizations have utilized Facebook to enhance a sense of community, Instagram for information sharing, and YouTube for advertising (Turkulainen et al., 2015). Recently, a few scholars explicated the roles of WeChat and WhatsApp in stakeholder communication and found that these mobile social media applications are useful for accelerating the engagement of specific stakeholder groups through instant messages that disclose information and help improve stakeholder cooperation by overcoming constraints of space and time in complex projects (Zhang et al., 2018).

While research has recognized the benefits of stakeholder dialogue in stakeholder engagement, the organizations of complex projects have used social media channels primarily to communicate to external stakeholders and achieve the breadth of communication. In other words, despite their potential for enabling stakeholder dialogue and the depth of communication, understanding of the dialogic exchange potential of social media channels in external stakeholder communication is very limited in complex projects. Moreover, stakeholder communication research into social media channels is clearly in its infancy in the context of complex projects as previous studies have focused on conceptualizing and describing the use of social media channels for communication purposes instead of analyzing the communication and its effectiveness in detail. This lack of empirical knowledge is thus likely to undermine the understanding of how to use social media channels for effective stakeholder communication to engage external stakeholders. Consequently, studying the details and effectiveness of social media communication in complex projects is relevant for developing a more nuanced and contextualized understanding of stakeholder engagement.

2.5 Theoretical frameworks for empirical research

This subsection explains and justifies the chosen theoretical frameworks that are used to approach RQ1-RQ3 in the empirical research articles A1-A3.

2.5.1 Organizing external stakeholder engagement as a problem-solving process to four universal problems of organizing

The theory of organizing as a problem-solving process (Puranam et al., 2014) and the micro-structural approach to organization design (Puranam, 2017) were combined as a theoretical framework to approach RQ1.

The theory of organizing as a problem-solving process argues that any problem of organizing is concerned with solving four universal challenges, task division and allocation, and provision of reward and information that define an organization’s existence (Puranam et al., 2014). This theory defines that organizations vary in longevity, and they are generally multi-agent systems with identifiable boundaries and a clear objective toward which each agent’s efforts are expected to contribute (Puranam, 2018, p. 4). In the research context of this dissertation, a project organization is by definition a temporary system that is formed by multiple, predefined project actors whose activities contribute to the common goal of delivering the project (Burke & Morley, 2016; Davies & Hobday,
Theoretical and conceptual background

Theoretical and conceptual background

2005, pp. 119-121). Thus, the theory is applicable to the research context of this dissertation.

The micro-structural approach to organization design depicts large and complex organizations, such as project organizations, as a series of recurring smaller and simpler organizational structures (Puranam, 2017). The micro-structural approach facilitates understanding the micro-patterns of organizing. From this view, organizing external stakeholder engagement can be understood as a micro-pattern of project organization, being part of the broader project organizing.

Combining the theory of organizing as a problem-solving process with the micro-structural approach to organization design as a theoretical framework, it follows that organizing external stakeholder engagement in complex projects is a micro-pattern of project organization where the purpose is to develop organizing solutions to address the four universal challenges.

Task division means establishing objectives and breaking the objectives down into specific tasks, while task allocation is concerned with assigning organizational personnel into roles and tasks (March & Simon, 1993). In the present research context, solving these two challenges can mean that a project organization sets goals for external stakeholder engagement, and the goals are then broken down into specific tasks allocated to specialized roles and teams within the project organization. In turn, provision of reward means the challenge associated with motivating personnel to execute the assigned tasks and collaborate (Lawrence et al., 1967), and provision of information means the challenge of ensuring that personnel has the required information to execute the assigned tasks (Puranam, 2017). In the present research context, solving these two challenges can mean that a project organization offers monetary and non-monetary rewards, critical information systems, and communication and interaction opportunities to project personnel. In general, the organizing solutions can be understood as organizational roles, responsibilities, activities, events, and arrangements that help address the four universal challenges of organizing external stakeholder engagement.

The above-derived theoretical framework is used in A1 to reconcile emerging empirical findings for developing understanding of how external stakeholder engagement is organized. There are at least three main benefits to this theoretical framework. The framework is tolerant in its ontoepistemological interpretation of organizations and organizing (Puranam et al., 2014), which offers latitude but also a direction for the empirical analysis, offering a fertile basis for developing novel understanding. Also, as the framework’s theories are established and universal (March & Simon, 1993), they may provide a relatively comprehensive and theoretically general account of the phenomenon, facilitating the development of a comprehensive theory. Lastly, the framework is focused on the details of organizing (e.g., micro-patterns) (Puranam, 2017), which facilitates developing an in-depth understanding of the phenomenon.

As part of forming the theoretical framework, it is relevant to examine that the adopted conceptual definition of stakeholder engagement is consistent with the theoretical framework and thus appropriate for studying the research phenomenon of A1. The adopted definition stated that stakeholder engagement covers
those practices that the organization undertakes to involve stakeholders in organizational activities. Greenwood (2007, p. 318) argues that the broad definition implies that many areas of organizational activity involve stakeholder engagement, meaning that stakeholder engagement relates to both the organization in question and the activities within the organization. The above-derived theoretical framework, focusing on the organizational roles, responsibilities, activities, events, and arrangements, is consistent with the adopted definition of stakeholder engagement covering both the organization and its activities. Thus, the adopted definition is in line with the theoretical framework, offering an appropriate theoretical approach for the empirical research in A1.

2.5.2 Stakeholder theory as theoretical lens concerning the practices and rationales for engagement and disengagement

Stakeholder theory, concerning the practices and rationales for engaging and disengaging external stakeholders, was used as a theoretical lens to approach RQ2.

Stakeholder theory and research has offered rich understanding of the different practices used for engaging and disengaging external stakeholders in different organizational contexts (see, e.g., Freeman et al., 2017), as was reasoned in subsection 2.4.2. While some of the practices are more general, abstract, and applicable to several organizational contexts (e.g., information events), some are more specific, detailed, and applicable to certain organizational contexts (e.g., workshops with authorities during the planning phase of a complex project). However, the richness of the previous research comes at a price. It is difficult to identify a single, clearly defined, and comprehensive framework related to engagement and disengagement practices that could be used in the empirical research to address RQ2. The previous research provides a rich account of the practices, but the knowledge is still relatively unstructured. As Freeman and colleagues (2010, p. 287) argued, there is a need to investigate some industry best practices that illustrate stakeholder management to develop a more coherent and structured theory around these practices in different contexts. Hence, an inductive approach regarding the practices is a justified choice for the empirical research in A2.

Regarding the rationales, the previous stakeholder theory and research has provided understanding of organizations’ schemes of reasoning for stakeholder engagement and disengagement, as was reasoned in subsection 2.4.2. Particularly, instrumental (Mitchell et al., 1997), resource-dependency (Frooman, 1999), identity-based (Scott & Lane, 2000), institutional (Orr & Scott, 2008), value creation (Eskerod & Ang, 2017), and moral reasoning (Freeman et al., 2007) can be used as theoretical frameworks that facilitate understanding the rationales for engaging and disengaging stakeholders.

However, the above frameworks are relatively static, firm-centered and focused on the theoretical analysis of external stakeholders’ attributes. That being said, these frameworks do not adapt or associate the reasoning to the empirical context of complex projects that includes an evolving multi-stakeholder setting where external stakeholders enter and exit the system over time and where the...
practices and rationales emerge from the networked stakeholder interactions (Bakker et al., 2016; DeFillippi & Sydow, 2016). The existing frameworks are of limited value in empirical research to understand the reasoning for using practices to engage and disengage external stakeholders over a complex project’s lifecycle.

Following the above thinking, the empirical research of this dissertation approached RQ2 through inductive reasoning because clearly defined, comprehensive and justifiable theoretical frameworks could not be identified for the empirical research. The previous means that empirical data analysis and observations drive the (theoretical) explanation regarding the practices devised and implemented by the project organization and the related rationales. However, the key concepts of this research (practices and rationales) are heavily embedded in stakeholder theory, which means that stakeholder theory functioned as a theoretical background lens for the empirical analysis, inviting elements of abductive reasoning to keep the analysis focused on relevant issues (cf. Dubois & Gadde, 2002). Hence, following stakeholder theory and the adopted conceptual definition of stakeholder engagement, the practices can be defined as organizational activities through which the internal stakeholders (project organization) engage and disengage external stakeholders. In turn, the rationales can be defined as the internal stakeholders’ reasoning for using the practices associated with the complex project’s evolving multi-stakeholder setting.

The main benefit of the above inductive approach is that the empirical research may avoid unnecessary bias because the empirical data analysis and observations are not theoretically conservative and directed toward a pre-selected theory (Ketokivi & Choi, 2014). Instead, the empirical analysis is approached with more leeway, and it may include a broader range of perspectives. As a result, the findings are firmly grounded in empirical data through a rich and detailed description that yields in-depth insights regarding the research phenomenon.

Lastly, it is essential to examine that the adopted conceptual definition of stakeholder engagement is in line with the theoretical lens and thus suitable for studying the research phenomenon of A2. The adopted definition for stakeholder engagement was derived from stakeholder theory and focused on the organizational practices undertaken to involve external stakeholders in organizational activities (Greenwood, 2007). The definition is naturally consistent with the above definition for practices (also derived from stakeholder theory) that focuses on organizational activities used to engage external stakeholders in complex project activities. The above definition for practices also considers the other side of the coin, that is, organizational activities that are used to disengage external stakeholders from complex project activities. Although concerned with disengagement, the theoretical logic is in line with Greenwood’s definition. Hence, the adopted conceptual definition of stakeholder engagement is consistent with the theoretical lens, providing a relevant theoretical approach for the empirical research in A2.
2.5.3 Uses and gratifications theory for effective external stakeholder communication in social media

Uses and gratifications theory (UGT) was used as a theoretical framework to approach RQ3. UGT is a communication theory applied in some other organizational contexts to understand stakeholder communication and engagement, notably in marketing (see, e.g., Dolan et al., 2019; Osokin, 2019).

UGT argues that individuals consume specific media to satisfy their emotional or rational needs (Dolan et al., 2016; Katz & Foulkes, 1962). While rational needs include remunerative and informational content, emotional needs include relational and entertaining content (Dolan et al., 2019). Remunerative content serves a utility function for the user (Dolan et al., 2016) that may include (but is not limited to) personal gains such as economic incentives, job-related benefits, or other individual benefits (Muntinga et al., 2011). Information can include knowledge about an organization, brand, products, prices, services, campaigns, events, and other items (de Vries et al., 2012). Entertaining content includes content that provides media users with fun and enjoyment, contributing to relaxation, hedonistic pleasure, aesthetic enjoyment, escapism, and emotional release (Eighmey & McCord, 1998). Relational content includes opportunities to connect with a community or social group, share feelings, experiences, and views, and seek support and help (Dolan et al., 2019; Muntinga et al., 2011). Individuals are likely to desert a media channel and respective organization if their needs are not satisfied via these content types (Palmgreen & Rayburn, 1979).

A fundamental assumption in UGT is that individuals are active contributors and recipients of media content (Ruggiero, 2000). In the context of social media, individuals can react, share, and contribute to media content (Smock et al., 2011). Therefore, UGT can help explain how and why the members of a social media community consume, use, share, and react to a complex project organization’s social media content. That is to say, UGT is a relevant theory that facilitates explaining how and why specific social media content satisfies social media community members’ needs, thus engaging them effectively in project organization’s social media activities. To achieve this, a project organization must offer gratifying social media content, which is designed to appeal to social media community members’ emotional or rational needs.

UGT is combined with complex projects and stakeholder literature to derive testable and contextualized hypotheses. The resulting hypotheses are summarized in Table 4. To spare the reader from lengthy explanations, the text after Table 4 briefly explains and justifies the hypotheses. The complete reasoning for hypotheses is provided in A3.
Regarding the informational content, there is evidence that external stakeholders of complex projects are interested in information concerning the economic, social, and environmental sustainability issues and impacts of complex projects (Aarseth et al., 2017; Sabini et al., 2019; Silvius, 2017). For example, the economic impacts of complex projects are potentially significant as budget or schedule overruns can negatively impact external stakeholders also in the form of additional environmental impacts due to prolonged project delivery, and thus external stakeholders expect transparent information related to these issues (Flyvbjerg, 2014; Ninan et al., 2019a; Williams et al., 2015). Also, environmental issues, including construction site emissions, noise and air pollution, and natural resource expenditure impact external stakeholders who are interested in learning about these issues (Aaltonen & Kujala, 2010; Eskerod & Huemann, 2014; Liu et al., 2018). Lastly, complex projects include remarkable social benefits for and impacts on external stakeholders, such as new services, infrastructure, utilities, and jobs, which are of interest to external stakeholders (Eskerod & Ang, 2017; Di Maddaloni & Davis, 2018; Vuorinen & Martinsuo, 2019). Hence, offering information about the sustainability issues and impacts of complex projects should effectively engage external stakeholders. Based on the above, three hypotheses (H1a-H1c in Table 4) were derived, one for each sustainability dimension of the informational content.

Concerning the remunerative content, it is implausible that complex projects offer traditional forms of personal gains (e.g., prizes). However, external stakeholders are known to seize opportunities to influence project implementation through complaints, protests, appeals, and other means (Aaltonen et al., 2015; Derakhshan et al., 2019a; Gil, 2010). As the complaints, protests, appeals, and
other means can impact project implementation and outcomes such as design changes related to environmental or technical issues (Olander, 2007), they can serve a utility function for external stakeholders. Thus, offering opportunities to influence project implementation can serve a utility function for external stakeholders, thus engaging them effectively. Based on the previous, one hypothesis (H2 in Table 4) was formulated regarding the remunerative content type.

Regarding the entertaining content, a project organization may utilize visualizations of project outcomes and ongoing implementation works and less formal content and sentiments as part of the communication (Ninan et al., 2019a; Turkulainen et al., 2015). For instance, 3D illustrations or videos of the end product can facilitate dialogue (Alin et al., 2013) and communicate implementation progress in an entertaining, engaging, informal, and transparent way (Hietajärvi & Aaltonen, 2018). This kind of content may also include humor such as sarcasm or jokes, supported by emoji and emoticons. Therefore, offering audio-visual illustrations or humor should effectively engage external stakeholders. On that basis, two hypotheses (H3a & H3b in Table 4) were formulated for the entertaining content type.

Concerning the relational content, project organizations may offer discussion topics or address external stakeholders’ questions that are known to stimulate vivid interaction with and among external stakeholders (Chow & Leiringer, 2020; Eskerod & Ang, 2017; Eskerod & Huemann, 2014). Also, external stakeholders may experience general support and help with topical project issues as part of relational content, such as project organization’s messages about which project personnel to contact about specific topics (e.g., blasting, changing traffic arrangements) (Ninan et al., 2019a; Turkulainen et al., 2015). The previous likely enhance a sense of community and belonging as they facilitate external stakeholders to connect with each other and express views and opinions. Consequently, offering general support and help with topical issues or stimulating interaction should effectively engage external stakeholders. Based on the previous, two hypotheses (H4a & H4b in Table 4) were derived for the relational content type.

Lastly, it is crucial to examine that the adopted conceptual definition of stakeholder engagement is consistent with the theoretical framework and thus suitable for studying the research phenomenon of A3. A project organization’s communication in social media is an organizational practice used to involve external stakeholders in the project’s activities. Such communication is thus in line with the adopted definition of stakeholder engagement, focusing on organizational practices used to involve external stakeholders in organizational activities (Greenwood, 2007). Therefore, the adopted definition is in line with the theoretical framework, offering a valid theoretical approach for the empirical research in A3.

However, A3 also focuses on and measures the effect of communication, which includes another form of stakeholder engagement. The other form of stakeholder engagement is external stakeholders’ engagement level. This other form is not consistent with Greenwood’s definition, and thus a more specific definition is required to complement the adopted definition.
In this study, engagement level can be considered an attribute of a social media community member (i.e., an external stakeholder), which describes their interactive experience with the project organization and its social media communication content (i.e., user message). Such an experience relates to conceptualizations of engagement as a psychological state achieved through a phenomenological experience (Brodie et al., 2011). Phenomenological experience means a personal, interactive experience with a central engagement agent or object (i.e., a specific contextual relationship) (Brodie et al., 2019). Scholars have suggested that an engaged psychological state is only reachable through such an interactive experience (van Doorn et al., 2010). Although originally associated with individuals, the idea has been extended to concern any type of actor by using the term disposition (Storbacka et al., 2016). The previous means that regardless of a stakeholder being an individual, group, or organization, it can have a psychological state (Kleinaltenkamp et al., 2019).

An engaged psychological state (or disposition) can include both rational and emotional attachments to the engagement object or agent through the experience (Brodie et al., 2011). Typical engagement objects relate to specific services, products, or pieces of communication (Jahn & Kunz, 2012). However, objects can also include other stimuli, e.g., online content and interactions (Manetti & Bellucci, 2016) and interpersonal and computer-mediated interactions in general (Brodie et al., 2013). Engagement agents usually include organizations and their personnel with whom stakeholders interact directly or indirectly through the engagement object (Brodie et al., 2011).

Following the above theoretical approach to stakeholder engagement as a psychological state, the central engagement agent in this study is a project organization. In turn, the central object is its specific piece of communication, meaning the social media user message and its content. The interactive experience consists of the human-computer mediated interaction between the project organization and its external stakeholder in social media. Through this interaction, the external stakeholders may reach an engaged state that can include emotional and rational attachments to the project organization or its communication content.

The above is consistent with the selected theoretical framework of UGT that focuses on stakeholders’ satisfaction of emotional and rational needs through the interactive use of media content. UGT heavily implies a phenomenological experience, meaning that a similar psychological state can be reached through the realization of specific gratification needs. Based on the above reasoning, defining engagement level as a psychological state (or disposition) of an external stakeholder is a well-justified theoretical approach for the empirical research in A3.

2.6 Summary of theoretical section

Table 5 summarizes the key arguments and conclusions of the theoretical section.
Stakeholder engagement in complex projects is a critical aspect of managing external stakeholders. The dissertation focuses on integrating multiple organizational perspectives to approach stakeholder engagement. específicas. When external stakeholders are involved in complex projects, project organizations may engage and disengage them throughout the project's lifecycle. The knowledge gap in communication perspective, addressing direct and indirect discussion between an organization and its stakeholders, is pivotal for ensuring the success of complex projects. The institutional context of the project's social media community members' participation is crucial, especially in complex projects. The knowledge gap in practice perspective and the theoretical framework to approach RQ1: how multiple organizations forming a complex project engage and disengage external stakeholders used as a theoretical framework to approach RQ2: how a project organization of a complex project engages and disengages external stakeholders. Rationales: the reasoning for using the practice perspective and contingency conditions/other mechanisms. The knowledge gap in organizing perspective and RQ3: how project organizations communicate effectively in social media to engage external stakeholders in complex projects. Stakeholder view of organization: the concept of actual, project organization exerts its influence on the organization but may affect or be affected by it. Four interrelated assumptions are involved in organizing: task division and allocation, and emergent and socio-political complexities focus primarily on formal, official, or contractual link to the organization. Two schools of thought: stakeholder theory, defining how the project organization engages external stakeholders over the project's lifecycle, and why stakeholders are engaged in project's activities. The knowledge gap in organizing: task division and allocation, and emergent and socio-political complexities. Emerging and socio-political complexities challenge the organization to develop organizing solutions to address the four universal challenges of organizing: formal, official, or contractual link to the organization. Critical realist view on stakeholder engagement: incorporated is the causal and contextual nature of stakeholders' interactions. Following the critical realist view, three theoretical frameworks are practiced: descriptive, normative, instrumental, and emergent, and socio-political framework to create as much value as possible. Using and gratifications theory is combined with descriptive, normative, instrumental, and emergent, and socio-political framework to create as much value as possible. The knowledge gap in measurable engagement in greater detail perspectives to approach stakeholder accountability provide great insights.
3. Research methodology

3.1 Research approach and scientific reasoning

The research process, illustrated in Figure 3, has not been a linear deductive (from theory to empirical analysis) or inductive (from empirical analysis to theory) research process but an iterative and nonlinear process. Whether it was about a single study or the dissertation as a whole, I have been going back and forth between theory and empirical data, juxtaposing the two constantly to refine the empirical findings and theoretical arguments. This recursive process can be characterized mainly as abductive as it reconciles theory and empirical data to infer explanations about the research phenomenon (cf. Ketokivi & Choi, 2014). However, it is worth mentioning that while the overall research process can be portrayed as abductive, individual parts within the research process emphasize different forms of scientific reasoning. For example, while the form in A2 is primarily inductive, the form in A3 is mainly deductive. The previous relates to Mantere and Ketokivi’s (2013) point, where a researcher uses and combines all three forms of scientific reasoning (inductive, deductive, and abductive) during a research process, but the three forms of reasoning are used differently and to a varying degree. Hence, while it would be misleading to use a single reasoning form as a rigid label to describe the whole research process, it is appropriate to emphasize the predominant form of scientific reasoning.

The research approach is explained in the following subsections by first introducing the overall research strategy and then the article-specific research designs, methods, and analyses.
3.2 Case study research

The overall research strategy of the empirical research is case research. A case study, in general, can be described as an empirical and in-depth investigation into a contemporary phenomenon embedded in its context, where the boundaries between the phenomenon and context can be nebulous (Yin, 2015, p. 16). It is often deemed suitable for empirical research when the study is about understanding in-depth (e.g., with an extensive description) how and why some present social phenomenon unfolds (Yin, 2015, p. 2).

The objective of this dissertation was not to develop an entirely new, grand-level theory per se but to complement stakeholder theory and research by developing new theory concerning stakeholder engagement in the form of novel...
conceptual models and theoretical propositions. Such models and propositions enrich a better understanding of external stakeholder engagement in complex projects by offering new, contextualized, theoretical, and empirical insights. Temporally bounded and profoundly describing cases of the phenomenon that produce in-depth knowledge of the contextual factors and characteristics are well-suited for achieving such an objective and purposes. The overarching RQ and RQ1-RQ3 are also in line with Yin’s suggestions for the suitability of case study research. With these considerations in mind, I believe that case study research strategy is a justified and most suitable approach for the empirical research of this dissertation.

Case study research is tolerant and applicable to different ontoepistemological orientations, and several books and articles have been written about it with different philosophical orientations (see, e.g., Burawoy, 1998; Easton, 2010; Eisenhardt, 1989; Järvensivu & Törnroos, 2010; Ketokivi & Choi, 2014; Siggelkow, 2007; Yin, 2015). Perhaps the most popular and widely utilized case study approach is written by Robert Yin, whose case study research is oriented especially to realist perspectives (Yin, 2015, p. 17). Yin’s case study approach has been an impetus for the development of many other articles and books about case study methodology. Since this dissertation has adopted a critical realist perspective, Yin’s case study methodology provides a justified and relevant approach, which is primarily followed. Nevertheless, Yin’s methodology is complemented with other relevant and necessary case study methods. While justifying the following point is beyond the scope of this research, critical realism is also tolerant of different research strategies, designs, and methods (Sayer, 2000, p. 19), offering a suitable match with case study research.

Defining the case is pivotal in case study research, which is also the unit of analysis (Yin, 2015, p. 31). In this dissertation, the primary unit of analysis for addressing the overall RQ is the complex project organization that engages external stakeholders in complex projects. As the boundaries between the phenomenon and context are relatively obscure in case study research, the context is also analyzed carefully, extending the unit of analysis partly to the complex project itself, including external stakeholders. Hence, the ‘case’ in this dissertation can be defined as the complex project, with a primary focus on the project organization as the unit of analysis. Broadening the analysis will provide leeway for understanding both the context and the embedded primary unit.

The case needs to be also defined temporally (Yin, 2015, p. 34), especially since complex projects are temporal endeavors by nature, and in fact, a project can be defined temporally in many ways (cf. temporary organizing (Bakker et al., 2016; Burke & Morley, 2016), project lifecycle (Aaltonen & Kujala, 2010) and system lifecycle (Artoo et al., 2016) definitions). In this dissertation, the case is defined temporally by relying on the project lifecycle definition (see, e.g., Aaltonen & Kujala, 2010; Martinsuo et al., 2018; Matinheikki et al., 2016), which traditionally includes the front-end, planning, implementation, and operations phases.

Front-end (also known as pre-planning) is the phase where several feasibility studies are conducted before investment decisions, and the project organization is usually formed. Planning (also known as design) is the phase following after
investment decisions, where detailed plans and studies are conducted regarding how to implement the project and the project organization is established. Implementation (also known as execution) is the phase where plans are put into action, and project work is executed, which ends with the project being finished. Operations is the phase where the finished project (or sub-project) is transferred to the organization responsible for operating the end-product, and the operations begin. The project lifecycle definition helps to characterize the case, its context and set boundaries to understand the phenomenon.

The findings from the three articles (A1-A3) are synthesized qualitatively for addressing the overarching RQ. The analysis is iterative and foremost conducted at the organizational level. The form of scientific reasoning can be best described as inductive, as the analysis goes back and forth between the primary findings of dissertation articles. In practice, the articles’ empirical findings, contextual issues, and case narratives are revisited to merge them into an overarching explanation of the phenomenon. The overarching explanation is encapsulated in three propositions that are developed in the synthesis.

The dissertation articles are founded on case study research. However, addressing RQ1-RQ3 necessitates employing different types of case studies, modes of case research, logics of scientific reasoning, data, methods, and analyses. The case study methodology used in A1-A3 is summarized in Table 6 and elaborated in the following subsections 3.3–3.5.
Table 6. Case study methodology used in the dissertation articles.

<table>
<thead>
<tr>
<th>Type of case study design</th>
<th>A1</th>
<th>A2</th>
<th>A3</th>
</tr>
</thead>
<tbody>
<tr>
<td>A holistic multiple-case study following literal replication logic</td>
<td>A holistic single-case study following the longitudinal case rationale</td>
<td>An embedded single-case study following the unusual case rationale</td>
<td></td>
</tr>
<tr>
<td>Theory elaboration: Elaborate the theory of organizing as a problem-solving process in organizing external stakeholder engagement</td>
<td>Theory generation: Develop new understanding and explanation of the interplay of engagement and disengagement of external stakeholders over time</td>
<td>Theory testing: Contextualize and test the logic of uses and gratifications theory in effective social media communication to engage external stakeholders</td>
<td></td>
</tr>
<tr>
<td>Form of scientific reasoning</td>
<td>Abductive: Organizing as a problem-solving process to four universal challenges and a micro-structural approach to organizational design are combined as a theoretical framework</td>
<td>Inductive: Empirical data drives explanation and stakeholder theory is used as a theoretical lens to maintain focus</td>
<td>Deductive: Uses and gratifications theory is used to develop hypotheses, which are contextualized using complex project and stakeholder research</td>
</tr>
<tr>
<td>Case(s)</td>
<td>Lielahti-Kokemäki railway project (2011-2015): Complete renovation of a 90-km section of a 155-km railroad between two cities in Finland</td>
<td>Rantatunneli highway project (2014-2017): Realignment of a 4-km section of a highway inside Tampere city by implementing the country’s new longest road tunnel (2.3 km)</td>
<td>Rantatunneli highway project (2014-2017): Realignment of a 4-km section of a highway inside Tampere city by implementing the country’s new longest road tunnel (2.3 km)</td>
</tr>
<tr>
<td>Unit and level of analysis</td>
<td>The complex project with a focus on the organization and organizing of stakeholder engagement. The analysis was conducted at the organizational level. The projects were analyzed from their front-end phases to the completion of their implementation phases</td>
<td>The complex project with a focus on the organization’s stakeholder governance. The analysis was conducted at the organizational level. The project was analyzed from the front-end phase until mid-project implementation and early operations phases</td>
<td>The complex project with a focus on the organization’s stakeholder communication in social media (embedded unit Facebook message). The analysis was conducted at the organizational level over the implementation phase</td>
</tr>
<tr>
<td>Data</td>
<td>Semi-structured interviews: 11 from the Rantatunneli and 6 from the Lielahti-Kokemäki project</td>
<td>Semi-structured interviews: 27</td>
<td>Facebook Wall posts and comments: 824 from the project organization’s official account</td>
</tr>
<tr>
<td>Data analysis</td>
<td>Within-case analysis: Conventional content analysis of interviews and triangulation using documents</td>
<td>Thematic analysis of interviews and triangulation using documents</td>
<td>Multiple linear and generalized linear regressions</td>
</tr>
</tbody>
</table>

### 3.3 Holistic multiple-case study (A1)

A1 employs a multiple-case study design (Eisenhardt, 1989) to address RQ1. Literal replication logic guided the case selection, meaning that cases were selected with the expectation of providing similar findings like in a series of experiments to confirm inferences drawn from previous cases (Yin, 2015, p. 57). A multiple-case study with literal replication is an appropriate research design for understanding how a phenomenon unfolds in detail (Yin, 2015, p. 62). Thus, it is suitable for addressing RQ1 that focuses on how multiple organizations forming a project organization jointly organize external stakeholder engagement.
In the case selection, the focus was on identifying a set of cases (typically two or more) with exemplary outcomes of the empirical phenomenon for addressing RQ1 and understanding how the exemplary outcomes might have occurred, as proposed by Yin (2015, p. 62). Infrastructure projects that utilize alliance contractual models have specific collaborative organizational characteristics that could illuminate how an inter-organizational project organization organizes external stakeholder engagement. A project alliance model is a relational delivery model where two or more organizations, usually owners, clients, main contractors, and designers, sign a multiparty contract to agree on joint objectives and key results areas and cooperate by sharing risks and rewards (Halman & Braks, 1999). Alliance partners commit to transparent, unanimous, and best-for-project management principles, where the partners work as a collaborative group acting with integrity to create value for all stakeholders (Lahdenperä, 2012). These characteristics imply that alliance project organizations have special collaborative features that can illuminate how multiple organizations forming a project organization jointly organize external stakeholder engagement.

Two alliance projects, Rantatunneli (hereafter referred to as Tunnel project) and Lielahti-Kokemäki (hereafter referred to as Railway project) projects, were selected. These projects were part of the development program of the Finnish Transport Infrastructure Agency, intending to explore novel forms of project organizing to promote efficiency in delivering national transport infrastructure. Table 7 summarizes relevant contextual information from both case projects, and Table 8 depicts project timelines, including main project phases, events, and activities.
Table 7. Essential contextual information of Railway and Tunnel projects, adapted from (Lehtinen & Aaltonen, 2020).

<table>
<thead>
<tr>
<th></th>
<th>Railway project</th>
<th>Tunnel project</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Purpose</strong></td>
<td>The complete renovation of a 90-km section of a 155-km railroad between the cities of Tampere and Pori</td>
<td>The realignment of a 4-km section of an urban highway in the city of Tampere</td>
</tr>
<tr>
<td><strong>Scope</strong></td>
<td>Renovation and soil works, widening the railroad embankment and developing new technical and functional systems</td>
<td>Implementation of Finland’s longest road tunnel (2.3 km) with new cloverleaf and interchange arrangement, and several technical and functional systems and devices related to, e.g., safety, automation, control, and telecommunications</td>
</tr>
<tr>
<td><strong>Schedule</strong></td>
<td>Jan. 2011 – Jun 2015 (4.5 years); finished including scope extensions in Feb. 2015, nearly 4 months ahead of schedule</td>
<td>Oct. 2013 – May 2017 (3.5 years); finished within the scope in Nov. 2016, 6 months ahead of schedule</td>
</tr>
<tr>
<td><strong>Budget</strong></td>
<td>EUR 106.4 million: finished under budget at EUR 104.8 million</td>
<td>EUR 180.3 million: finished under budget at EUR 176.5 million</td>
</tr>
<tr>
<td><strong>Accolades</strong></td>
<td>National Construction Site of the Year award for its efficiency in management and operations (2012)</td>
<td>International Project Management Association (IPMA): IPMA Global Project Excellence Award (first prize) in the Mega-sized projects category for its success and achievement of outstanding project management results (2018)</td>
</tr>
<tr>
<td></td>
<td>National Transparency in Communication award for being a forerunner in external stakeholder engagement (2014)</td>
<td>Project Management Association Finland: Project of the Year award (2018)</td>
</tr>
<tr>
<td></td>
<td>National Occupational Safety award (2014)</td>
<td></td>
</tr>
<tr>
<td><strong>Project organization</strong></td>
<td>The client, Finnish Transport Infrastructure Agency, formed the alliance partnership with Rail contractor (pseudonym for the main contractor)</td>
<td>The clients, City of Tampere and Finnish Transport Infrastructure Agency, formed the alliance partnership with Infra contractor, Infra designer, and Infra engineer (pseudonyms for the main contractor, designer, and engineering companies)</td>
</tr>
<tr>
<td></td>
<td>The alliance formed the project organization together with subcontractors</td>
<td>The alliance partners formed the project organization with subcontractors who were tendered utilizing the alliance principles as far as possible</td>
</tr>
<tr>
<td><strong>External stakeholders</strong></td>
<td>Local communities (residents along the close environment of the track and its stations, users of the railway and its stations)</td>
<td>Local community (surrounding residents, landlords, and other users of the new infrastructure)</td>
</tr>
<tr>
<td></td>
<td>Centre for Economic Development, Transport and the Environment (regulatory agency and authority)</td>
<td>Centre for Economic Development, Transport and the Environment (regulatory agency, authority, and future operator)</td>
</tr>
<tr>
<td></td>
<td>National Board of Antiquities and Historical Monuments (regulatory agency and authority)</td>
<td>Local government (Pirkanmaa province)</td>
</tr>
<tr>
<td></td>
<td>Finnish Transport and Communications Agency (regulatory agency and authority)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>VR Group (future operator)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Local governments (Provinces and cities along the track)</td>
<td></td>
</tr>
<tr>
<td><strong>Stakeholder environment</strong></td>
<td>Implementation caused disturbances to railway traffic. Also, residents along and users of the railway and its stations were heavily affected by the project</td>
<td>Implementation within existing and dense infrastructure caused many disturbances and interruptions that affected external stakeholders</td>
</tr>
<tr>
<td></td>
<td>This project was somewhat controversial, having both proponents and opponents. The opponents were concerned with preserving the heritage value of the old 19th-century railway. The proponents supported the renovation and safety of new infrastructure</td>
<td>The project was somewhat controversial, having both opponent and proponent stakeholders. The opponents favored public transportation reforms over other transportation infrastructure and felt that a new highway tunnel would benefit only those who owned a vehicle. The proponents supported the new highway tunnel as it improved the accessibility of the city, decreased noise pollution, and enabled new land use in the area</td>
</tr>
</tbody>
</table>
Table 8. Railway and Tunnel project timelines, adapted from (Lehtinen & Aaltonen, 2020).

<table>
<thead>
<tr>
<th>Lifecycle phases</th>
<th>Events and activities of Railway project</th>
<th>Events and activities of Tunnel project</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Q4/2009: Research collaboration with National Technical Research Centre to explore how alliance models can be implemented nationally</td>
<td>12/2011: City of Tampere agrees to implement an alliance delivery model in Tunnel project</td>
</tr>
<tr>
<td></td>
<td>Q1/2010: Workshops and information seminars with various stakeholders about alliance delivery method</td>
<td>5/2012: Request for quotations (five tenderers)</td>
</tr>
<tr>
<td></td>
<td>5/2010: Finnish Transport Infrastructure Agency decides to implement an alliance delivery method through Railway project as a pilot</td>
<td>6/2012: First round evaluation of quotations and tenderers in a workshop format</td>
</tr>
<tr>
<td></td>
<td>2/2011: Request for quotations (five tenderers)</td>
<td>6/2012: Two best tenderers selected for the second round (emphasis on quality)</td>
</tr>
<tr>
<td></td>
<td>3/2011: First round evaluation of quotations and tenderers in a workshop format</td>
<td>7/2012: Second round evaluation of quotations and tenderers in a workshop format</td>
</tr>
<tr>
<td></td>
<td>4/2011: Two best tenderers selected for the second round (emphasis on quality)</td>
<td>7/2012: Infra Contractor, Infra Designer, and Infra Engineer selected as the alliance partners</td>
</tr>
<tr>
<td></td>
<td>6/2011: Second round evaluation of quotations and tenderers in a workshop format</td>
<td>7/2012: Infra Contractor, Infra Designer, and Infra Engineer selected as the alliance partners</td>
</tr>
<tr>
<td></td>
<td>7/2011: National Transport Infrastructure Agency selects Rail Contractor as the alliance partner (emphasis on quality and price)</td>
<td>7/2012: Second round evaluation of quotations and tenderers in a workshop format</td>
</tr>
<tr>
<td>Planning</td>
<td>8/2011: Alliance partners sign the Project Development Agreement</td>
<td>7/2012: Alliance partners sign the Project Development Agreement</td>
</tr>
<tr>
<td></td>
<td>Q3/2011: Alliance partners start conducting feasibility studies and alliance training and orientation</td>
<td>Q4/2012: Alliance partners start conducting feasibility studies and alliance training and orientation</td>
</tr>
<tr>
<td></td>
<td>5/2012: Alliance partners finalize project planning with Key Result Areas and Target Outturn Cost</td>
<td>9/2013: City of Tampere makes the final funding decision</td>
</tr>
<tr>
<td></td>
<td>9/2013: Alliance partners finalize project planning with Key Result Areas and Target Outturn Cost</td>
<td>9/2013: Alliance partners finalize project planning with Key Result Areas and Target Outturn Cost</td>
</tr>
<tr>
<td>Implementation</td>
<td>6/2012: Alliance partners sign the Project Execution Agreement</td>
<td>10/2013 Alliance partners sign the Project Execution Agreement</td>
</tr>
<tr>
<td></td>
<td>Q3/2012: Sub-contractors are tendered utilizing alliance principles as far as possible</td>
<td>Q4/2013: Sub-contractors are tendered utilizing alliance principles as far as possible</td>
</tr>
<tr>
<td></td>
<td>3/2015: Project completed</td>
<td>11/2016: Project completed</td>
</tr>
<tr>
<td>Operations</td>
<td>3/2015: New railway and stations are opened for public</td>
<td>11/2016: Highway tunnel is opened for public</td>
</tr>
<tr>
<td></td>
<td>2/2020: Guarantee period ends</td>
<td>10/2021 Guarantee period ends</td>
</tr>
</tbody>
</table>

The multiple-case study followed the theory elaborating case research, which focuses on the contextualized logic of a general theory, as summarized from Ketokivi and Choi (2014) in the following. In theory elaboration, the researcher identifies and applies an existing general theory that can be used to approach the empirical context and phenomenon. The general theory is used as a framework to reconcile empirical findings uncovering contextual idiosyncrasies that elaborate the general theory. The purpose is to examine the context and the general theory concurrently in a balanced manner. The form of scientific reasoning is foremost abductive, as the researcher goes iteratively between empirical data and the general theory. While theory elaboration is similar to theory generation in that findings are grounded to data, the process has less emergence, as it is guided by the general theory. Theory elaboration is also similar to theory test-
ing, but in theory elaboration, the researcher seeks to explore the empirical context with more leeway instead of testing deducible hypotheses. It may even be that the empirical context is not well-known enough to deduce any hypotheses for theory testing.

As explained in section 2.5.1, A1 uses the theory of organizing as a problem-solving process (Puranam et al., 2014) and the micro-structural approach to organization design (Puranam, 2017) as the theoretical framework (i.e., the general theory).

### 3.3.1 Data collection: documents & interviews

A1 utilized two data collection methods, documents, and semi-structured interviews, that are typical and appropriate for qualitative case studies, as explained briefly in the following by relying on Yin (2015, pp. 107-113). Documents are often specific, including detailed information on important events and activities, but they are also often broad, covering many events and activities of the case. Also, documents include data that are not produced by the case study, and thus they are not affected by some research biases such as the Hawthorne effect. For these reasons, documents are an excellent data source, especially for understanding the context in qualitative case studies. In turn, interviews are targeted to the phenomenon and focused directly on relevant issues of the study. Interviews are an excellent data source for qualitative case studies as they produce insightful and detailed explanations of the phenomenon. Against the above reasoning, the two methods were relevant in A1 for collecting rich qualitative data of the organizing process of external stakeholder engagement and the context in which it is embedded.

Publicly available electronic documents (project plans and reports, news articles) were gathered systematically from the case projects. The purpose was to develop a detailed background understanding of the case projects. The client, Finnish Transport Infrastructure Agency, shared all original project documents, including plans, value-for-money reports, and feasibility studies on their webpages concerning both case projects, which were acquired for analysis. Also, articles were searched from trade journals (Tekniikka & Talous, Rakennuslehti) and the largest national and regional media and news companies (Aamulehti, Yle, Helsingin Sanomat) using the projects’ titles as keywords. All documents were read and assessed for their relevance to the research. For example, documents that merely mentioned the projects by name but the contents were mainly about something else were excluded. A total of 39 documents from Tunnel project and 20 documents from Railway project were acquired.

A total of 17 semi-structured interviews (60 to 120 min) were conducted, 11 related to Tunnel project, and 6 related to Railway project. Interviews were open-ended and focused on the interviewee’s perspective. All interviews were audio-recorded and transcribed verbatim. Purposive sampling (Robinson, 2014) was used to choose informants who were believed to be best positioned to

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3 The Hawthorne effect means the bias related to study subjects’ altering their behavior as a response to their awareness of being studied.
address issues related to the research phenomenon. Different actors of the project organization (e.g., client, contractor, designer, and engineer) and their personnel in different roles (e.g., senior and middle managers, engineers, designers) were interviewed to obtain a wide range of perspectives. The details of the interviews and documents are summarized in Table 9.

Table 9. Railway and Tunnel project interviews and documents, adapted from (Lehtinen & Aaltonen, 2020).

<table>
<thead>
<tr>
<th>Railway project</th>
<th>Tunnel project</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Interviews</strong></td>
<td><strong>N = 17</strong></td>
</tr>
<tr>
<td>No.</td>
<td>Interviewee title (and parent organization)</td>
</tr>
<tr>
<td>1.</td>
<td>Assistant Project Manager (Finnish Transport Infrastructure Agency)</td>
</tr>
<tr>
<td>5.</td>
<td>Design Manager (Rail Contractor)</td>
</tr>
<tr>
<td></td>
<td>Document type (subject/identifier)</td>
</tr>
<tr>
<td></td>
<td>N</td>
</tr>
<tr>
<td></td>
<td>3</td>
</tr>
<tr>
<td>11</td>
<td>Selected national and regional news articles and releases</td>
</tr>
<tr>
<td></td>
<td>N</td>
</tr>
</tbody>
</table>

Interviews started with questions related to the interviewee’s background and role in the case project. After the introduction, the questions focused on external stakeholders, their engagement, and project organizing. These questions handled the required abilities and practices, actor relationships, organizational arrangements, key events and activities, successes, challenges, risks, and opportunities in organizing the project and external stakeholder engagement. The interviewees’ responses facilitated interpreting how external stakeholder engagement was organized in the case projects.
3.3.2 Data analysis: content analysis & cross-case comparison

Data analysis included two main phases, within-case analysis and cross-case analysis. Following the holistic design, the primary unit of analysis was the project organization, focusing on understanding the project organization’s practices (activities, arrangements, roles, and responsibilities) in organizing external stakeholder engagement. The complex project’s context was also included in the analysis since the boundaries between the context and phenomenon are blurred in case study research. The justification for holistic design is that the underlying general theory and phenomenon are of holistic nature with no logical subunits to be identified (Yin, 2015, pp. 62-63). The case projects were analyzed from their early front-end phase until the completion of the implementation phase.

Within-case analysis began with data familiarization and generation of case descriptions. Data familiarization included re-reading the interview transcripts and documents to compile thick case descriptions by relying on MS office tools (Word, PowerPoint). These steps facilitated developing a necessary background understanding of each case as a standalone unit, e.g., regarding their main phases, activities, events, and stakeholders. Additionally, tentative ideas regarding the research phenomenon were developed.

The initial within-case analysis was followed up with a three-step conventional content analysis that is suitable for qualitative case studies, as explained briefly in the following by relying on (Hsieh & Shannon, 2005). The analysis protocol of conventional content analysis is qualitative in nature, allowing insights to emerge from data with the purpose of developing inferences and theoretical yet empirically grounded concepts about the phenomenon. The advantage is that the approach does not impose or require preconceived categories or theories to analyze data, being suitable in situations when existing research and theory of the phenomenon are limited. With these considerations in mind, conventional content analysis was a suitable approach to analyze the data in A1 and develop empirically grounded concepts about the organizing solutions used for external stakeholder engagement.

In the first step, the transcribed interviews were analyzed using Atlas.ti software to develop empirical-level codes about how the project organization organized external stakeholder engagement (i.e., organizational activities, arrangements, events, roles, responsibilities) using document archive for triangulation purposes. This step resulted in dozens of codes describing the phenomenon at a detailed empirical level. In the next step, the differences and similarities between the empirical-level codes were compared to group the codes into meaningful and more abstract categories. The purpose was to develop groupings regarding the organizing solutions for external stakeholder engagement. This comparison resulted in a more manageable amount of coding units (circa ten code categories in each case). In the third and last step, the code categories were contrasted to formulate theoretical concepts about the organizing solutions. The last step was an iterative process where the aim was to develop concepts that could be clearly distinguished from each other and the code categories they included. Ultimately, three theoretical concepts were developed in each case.
The cross-case analysis began with a cross-case comparison with the aim of developing a unified code hierarchy and set of concepts describing the organizing solutions. In practice, the within-case code hierarchies were compared for similarities and differences. Following the literal replication logic, each coding level was revisited to verify similar theoretical logic and empirical conditions between the cases. When encountering unilateral findings not verified by the other case, these findings were eliminated from further analysis due to insufficient evidence, as described in literal replication (Yin, 2015, p. 63). After developing the unified code hierarchy and set of concepts, the organizing solutions were reconciled with the derived theoretical framework. That is, the general theory was utilized to comprehend its contextualized logic in the present research context, following the theory elaboration approach. The purpose was to understand how the identified organizing solutions addressed the four universal challenges of organizing external stakeholder engagement. The relationship between each organizing solution and the four universal challenges was analyzed. This last analysis step resulted in four propositions forming a middle-range theory of the phenomenon (i.e., theory combining theoretical and empirical elements (Bourgeois, 1979)).

### 3.4 Holistic single-case study (A2)

A2 employs a single-case study design (Eisenhardt, 1991) to address RQ2. The rationale for a single-case study design was based on the longitudinal case since RQ2 (how does a project organization of a complex project engage and disengage external stakeholders over the project’s lifecycle, and why) was concerned with a process-like explanation where the same case needs to be studied at several different points in time (cf. Yin, 2015, p. 53). Hence, a longitudinal case study was a justified and relevant approach.

Following the theoretical sampling logic of a longitudinal case (Eisenhardt & Graebner, 2007), case selection was concerned with identifying an infrastructure project with a long duration, highly dynamic stakeholder environment, and organizational boundaries that could serve to illustrate how and why engagement and disengagement of external stakeholders change over time. Mega-sized complex projects (i.e., infrastructure megaprojects) are excellent examples of these kinds of characteristics (Flyvbjerg, 2014), justifying the selection of an ongoing district infrastructure development megaproject, Tapiola project, located in the city of Espoo, Finland, as a suitable longitudinal case project. Table 10 summarizes necessary contextual information from Tapiola project, and Table 11 presents the project timeline, including main phases, events, and activities.
Table 10. Essential contextual information of Tapiola project, adapted from (Lehtinen et al., 2019a).

<table>
<thead>
<tr>
<th>Category</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Purpose</strong></td>
<td>Develop and renovate Tapiola district center and its infrastructure within the city of Espoo.</td>
</tr>
<tr>
<td><strong>Scope</strong></td>
<td>Modest initial scope: renovate two buildings, pavements, and streetlights. Final scope: (1) Demolish five massive real estates that form the district center, (2) construct a novel 12-story shopping center and residential complex with luxury condos and apartments, and (3) develop modern transportation infrastructure, including centralized car parking for 2,000 vehicles, new main bus terminal of the city, new metro station, and centralized surveillance systems. (4) All premises (shopping center, residential area, and transportation facilities) are integrated with many park-and-ride and other interfaces forming a massive amalgamation.</td>
</tr>
<tr>
<td><strong>Budget</strong></td>
<td>Total development volume exceeds EUR 3.4 billion.</td>
</tr>
<tr>
<td><strong>Project organization</strong></td>
<td>Developer company, Architect company, Designer company, Consultant company, Construction company, Infra company (pseudonyms for the main investor, developer and operator, main architect, second architect/designer, main consultant, main contractor company, and second contractor company, respectively) and City of Espoo (the original project owner) together formed the project organization.</td>
</tr>
<tr>
<td><strong>External stakeholders</strong></td>
<td>Real estate owners (real estate owners within the district)</td>
</tr>
<tr>
<td></td>
<td>Local community (residents within the district)</td>
</tr>
<tr>
<td></td>
<td>Tapiola residents’ association (local NGO)</td>
</tr>
<tr>
<td></td>
<td>National Board of Antiquities and Historical Monuments (regulatory agency and authority)</td>
</tr>
<tr>
<td></td>
<td>Centre for Economic Development, Transport and the Environment (regulatory agency and authority)</td>
</tr>
<tr>
<td></td>
<td>Other local authorities (Urban planning authority, Building inspection and surveillance authority, City construction office)</td>
</tr>
<tr>
<td></td>
<td>Customers (entrepreneurs, investors, non-commercial, commercial, and residential tenants)</td>
</tr>
<tr>
<td><strong>Stakeholder environment</strong></td>
<td>Tapiola district is a famous garden district and cultural cradle of the city of Espoo. Its post-war modernist architecture (architect Aarne Ervi) and heritage, including the central tower, fountains, public pool (in winter ice rink), theatre, art museums, culture center, and library, served Finns during the Second World War recovery period. The architecture and cultural heritage are to be strictly preserved. Thus, the stakeholder environment is very complex, as the project is highly controversial, having several opponent groups concerned with protecting the cultural heritage. Proponent stakeholders advocate modern district services and accessibility.</td>
</tr>
</tbody>
</table>
Table 11. Tapiola project timeline, adapted from (Lehtinen et al., 2019b).

<table>
<thead>
<tr>
<th>Lifecycle phases</th>
<th>Events and activities of Tapiola project</th>
</tr>
</thead>
<tbody>
<tr>
<td>Front-end</td>
<td>2004: Real estate owners co-found a decision-making organ, Tapiola Area Development (TAD)</td>
</tr>
<tr>
<td></td>
<td>2005: Major feasibility study for developing Tapiola area</td>
</tr>
<tr>
<td></td>
<td>2006: Cities of Helsinki and Espoo decide to build a new metro line from Helsinki to Espoo (station in Tapiola center)</td>
</tr>
<tr>
<td></td>
<td>2006: Project organization establishes specialized teams and planning procedures</td>
</tr>
<tr>
<td></td>
<td>2007: TAD publishes new plans for a centralized parking system</td>
</tr>
<tr>
<td>Planning</td>
<td>2008: Tapiola Central Parking established by real estate owners</td>
</tr>
<tr>
<td></td>
<td>2008: Developer company purchases a neighboring real estate from Tapiola center</td>
</tr>
<tr>
<td></td>
<td>2009: Tapiola project formally established by City of Espoo</td>
</tr>
<tr>
<td></td>
<td>2009: Project organization develops new planning procedures</td>
</tr>
<tr>
<td></td>
<td>2010: Funding arrangement, Tapiola balance unit, established by City of Espoo</td>
</tr>
<tr>
<td></td>
<td>2011: Project organization devises ‘theses for development’</td>
</tr>
<tr>
<td>Implementation</td>
<td>2011: Constructions begin for the metro station and centralized car parking</td>
</tr>
<tr>
<td></td>
<td>2011: Constructions begin for the first part of the shopping center and residential complex</td>
</tr>
<tr>
<td></td>
<td>2011: Developer company purchases a neighboring real estate from Tapiola center</td>
</tr>
<tr>
<td></td>
<td>2011: External stakeholders appeal against project plans and town plan</td>
</tr>
<tr>
<td></td>
<td>2012: City of Espoo makes decisions to develop a new main bus terminal and relocate the theatre to Tapiola</td>
</tr>
<tr>
<td></td>
<td>2013: Constructions begin for the second part of the shopping center and residential complex</td>
</tr>
<tr>
<td></td>
<td>2013: External stakeholders appeal against new project plans and town plan</td>
</tr>
<tr>
<td></td>
<td>2014: Developer company agrees to develop a new main bus terminal</td>
</tr>
<tr>
<td></td>
<td>2014: Town plan and project plans are finalized</td>
</tr>
<tr>
<td></td>
<td>2014: Developer company purchases a neighboring real estate from Tapiola center</td>
</tr>
<tr>
<td></td>
<td>2014: Real estate owners establish a centralized area surveillance organization</td>
</tr>
<tr>
<td></td>
<td>2015: Developer company purchases a neighboring real estate from Tapiola center</td>
</tr>
<tr>
<td></td>
<td>2017: Constructions begin for the third part of the shopping center and residential complex</td>
</tr>
<tr>
<td></td>
<td>2018: Constructions begin for the new bus terminal</td>
</tr>
<tr>
<td>Operations</td>
<td>2013: First part of the shopping center and residential complex begins operations</td>
</tr>
<tr>
<td></td>
<td>2013: First part of new centralized car parking begins operations</td>
</tr>
<tr>
<td></td>
<td>2016: Second part of new centralized car parking begins operations</td>
</tr>
<tr>
<td></td>
<td>2017: Second part of the shopping center and residential complex begins operations</td>
</tr>
<tr>
<td></td>
<td>2017: New metro begins operations</td>
</tr>
<tr>
<td></td>
<td>2019: New bus terminal begins operations</td>
</tr>
<tr>
<td></td>
<td>2019: Third part of the shopping center and residential complex begins operations</td>
</tr>
</tbody>
</table>

The single-case study followed the theory-generating case research, where the focus is on deriving theoretical explanation through empirical data analysis (Ketokivi & Choi, 2014). In theory-generating case research, the concern with applying an existing theory is that it might create unnecessary bias as empirical analysis becomes theoretically conservative, and observations are directed toward the pre-selected theory (Ketokivi & Choi, 2014). The form of scientific reasoning is thus primarily inductive as the explanation is derived from empirical observations.

A2 sought to develop new, contextualized understanding of the relationship between engaging and disengaging external stakeholders in complex projects over time, where rich empirical analysis and description drive the (theoretical) explanation to address RQ2. Hence, a theory-generating case design was suitable for the research to avoid undue theoretical bias. While the dominant form of
scientific reasoning was inductive, this case study research and its key concepts are heavily embedded in stakeholder theory. As argued in section 2.5.2, stakeholder theory functions as a theoretical lens for the empirical analysis, inviting elements of abductive reasoning to keep the empirical analysis focused on relevant issues (cf. Dubois & Gadde, 2002).

3.4.1 Data collection: documents & interviews

A2 utilized two typical and relevant data collection methods for qualitative case studies, semi-structured interviews and documents. Interviews were used as the primary data source and documents for triangulation and producing a background understanding of the case. As previously discussed in section 3.3.1, documents and interviews are appropriate data collection methods in qualitative case studies, being also appropriate in A2 for collecting rich data about how and why the project organization engaged and disengaged external stakeholders over time.

Interviewees were initially selected following the purposive sampling (Robinson, 2014), where the idea was to identify knowledgeable informants about the study phenomenon. The snowball sampling (Biernacki & Waldorf, 1981) was then used to identify other knowledgeable informants. In total, 27 individuals were interviewed from nine different actors, including actors from both the project organization (Developer company, Architect company, Consultant company, and City of Espoo) and the external stakeholder sides (End-users, Tapiola residents’ association, Local community, Customers, and National Board of Antiquities and Historical Monuments). The project organization’s interviewees had roles such as senior and middle manager, project manager, designer, architect, and consultant. The interviewees from the external stakeholder side had roles like NGO chairman and member, resident, manager and specialist (authority), and manager (tenant). Interviewing personnel in different roles from both sides ensured a broad range of perspectives to limit biases stemming from, e.g., a too narrow perspective. Interviews were conducted in five rounds (2011, 2012, 2014, 2015, 2016) to investigate the case at multiple points in time. The five rounds covered project planning, implementation, and operation phases in real-time, and data related to the project’s front-end phase were obtained retrospectively from the interviews. Several informants were interviewed more than once since they were very knowledgeable regarding the study subject.

Interviews were audio-recorded and transcribed verbatim for further analysis. Similar to data gathering in A1, the interview protocol began with questions about the interviewee’s background and role in the case project. After the introduction, the interviewees were asked to provide their chronological narrative and interpretation of the project event by event, focusing on stakeholder relationships, interactions, actions, activities, motives, and decisions. Intervening follow-up questions were asked whenever an informant mentioned something interesting or relevant to external stakeholders, which facilitated keeping focus and gathering details. The responses facilitated interpreting how and why external stakeholders were engaged and disengaged over time.
Open and closed access documents were collected to produce a sound background understanding of the case project. The document archive included more than 200 newspaper and online articles, project reports and plans, presentations, brochures, and company reports. These were collected retrospectively from 2004 and then in real-time starting from 2011, using the project’s title and location as keywords. Document archive was used to verify the dates and chronology of key events, activities, actions, and decisions relevant to the study phenomenon. The details regarding the interviews and documents are summarized in Table 12.

**Table 12. Tapiola project interviews and documents, adapted from (Lehtinen et al., 2019b).**

<table>
<thead>
<tr>
<th>Interview round</th>
<th>Interviewee organization</th>
<th>Interview number</th>
<th>Interviewee</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>First interview round (2011)</strong></td>
<td>Developer company</td>
<td>1.</td>
<td>CEO</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2.</td>
<td>Real estate investment manager</td>
</tr>
<tr>
<td></td>
<td></td>
<td>3.</td>
<td>Fund manager</td>
</tr>
<tr>
<td></td>
<td></td>
<td>4.</td>
<td>Head manager of real estate investment</td>
</tr>
<tr>
<td></td>
<td></td>
<td>5.</td>
<td>Manager of real estate development</td>
</tr>
<tr>
<td></td>
<td></td>
<td>6.</td>
<td>Real estate manager</td>
</tr>
<tr>
<td></td>
<td>City of Espoo</td>
<td>7.</td>
<td>Project manager</td>
</tr>
<tr>
<td></td>
<td></td>
<td>8.</td>
<td>Property manager</td>
</tr>
<tr>
<td></td>
<td></td>
<td>9.</td>
<td>Leader of the urban planning unit</td>
</tr>
<tr>
<td></td>
<td></td>
<td>10.</td>
<td>Trade promoter</td>
</tr>
<tr>
<td></td>
<td></td>
<td>11.</td>
<td>Development director</td>
</tr>
<tr>
<td></td>
<td>Local community</td>
<td>12.</td>
<td>Inhabitant (retired architect)</td>
</tr>
<tr>
<td><strong>Second interview round (2012)</strong></td>
<td>National Board of Antiquities and Historical Monuments</td>
<td>13.</td>
<td>Department manager and Senior specialist (joint interview)</td>
</tr>
<tr>
<td></td>
<td>Tapiola residents’ Association</td>
<td>14.</td>
<td>Chairman and Member (joint interview)</td>
</tr>
<tr>
<td></td>
<td>Architect Company</td>
<td>15.</td>
<td>Architect (partner)</td>
</tr>
<tr>
<td></td>
<td>City of Espoo</td>
<td>16.</td>
<td>Chairman of the urban planning unit board</td>
</tr>
<tr>
<td><strong>Third interview round (2015)</strong></td>
<td>Developer Company</td>
<td>17.</td>
<td>CEO</td>
</tr>
<tr>
<td></td>
<td></td>
<td>18.</td>
<td>Head manager of real estate investment</td>
</tr>
<tr>
<td></td>
<td></td>
<td>19.</td>
<td>Manager of real estate development</td>
</tr>
<tr>
<td></td>
<td></td>
<td>20.</td>
<td>Real estate manager</td>
</tr>
<tr>
<td></td>
<td></td>
<td>22.</td>
<td>Shopping center manager</td>
</tr>
<tr>
<td></td>
<td>Architect Company</td>
<td>22.</td>
<td>Architect</td>
</tr>
<tr>
<td></td>
<td>Consultant Company</td>
<td>23.</td>
<td>Consultant (partner)</td>
</tr>
<tr>
<td></td>
<td>City of Espoo</td>
<td>24.</td>
<td>Project manager</td>
</tr>
<tr>
<td><strong>Fourth interview round (2016)</strong></td>
<td>Railway Company</td>
<td>25.</td>
<td>CEO</td>
</tr>
<tr>
<td></td>
<td>City of Espoo</td>
<td>26.</td>
<td>Chairman of the urban planning unit board</td>
</tr>
<tr>
<td></td>
<td>Customers</td>
<td>27.</td>
<td>Director of the department stores in Nordic and the Baltic countries</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Document type</th>
<th>Quantity (N=215)</th>
</tr>
</thead>
<tbody>
<tr>
<td>National newspaper articles</td>
<td>64</td>
</tr>
<tr>
<td>Regional newspaper articles</td>
<td>55</td>
</tr>
<tr>
<td>Trade journal articles</td>
<td>8</td>
</tr>
<tr>
<td>Other articles</td>
<td>13</td>
</tr>
<tr>
<td>Project reports</td>
<td>16</td>
</tr>
<tr>
<td>Project plans and illustrations</td>
<td>11</td>
</tr>
<tr>
<td>Project documents and records</td>
<td>17</td>
</tr>
<tr>
<td>Press releases</td>
<td>9</td>
</tr>
<tr>
<td>Presentations and brochures</td>
<td>3</td>
</tr>
<tr>
<td>Written public statements</td>
<td>16</td>
</tr>
<tr>
<td>Other records and legislations</td>
<td>3</td>
</tr>
</tbody>
</table>
3.4.2 Data analysis: thematic analysis

Data analysis included a three-step inductive thematic analysis, which is appropriate for qualitative case studies, as explained briefly in the following by relying on (Braun & Clarke, 2006). Thematic analysis is independent of theory and epistemological approach, being especially suitable in inductive studies. Thematic analysis can provide a rich and in-depth account of qualitative data to describe and explain a complex phenomenon over time. In light of these considerations, thematic analysis was a suitable analysis approach in A2 to develop an in-depth, rich understanding of the used practices and related reasons for engaging and disengaging external stakeholders over the complex project’s lifecycle.

The primary unit of analysis was the project organization’s stakeholder governance focusing on analyzing the project organization’s practices and reasoning for engaging and disengaging external stakeholders. The unit of analysis follows the holistic design, as logical subunits could not be identified (Yin, 2015, p. 55). Tapiola project was analyzed from the early front-end phase until the mid-implementation and early operations phases.

The thematic analysis started with developing a nuanced understanding of the case by coding general themes and patterns from the transcribed interviews using MS Office and Atlas.ti software. Interviews were first coded from a single actor and interviewee perspective, and then the different accounts were combined. The themes and patterns included timestamped stakeholder actions, events, activities, roles, and relationships at a detailed, empirical level. Document archive was utilized concurrently for verification and triangulation. Next, the project organization’s engagement and disengagement practices were identified by aggregating the previous step codes through similarity and difference comparison. The practices included information on which actors were involved in the activity, where, how, and when to derive fine-grained explanations of external stakeholders’ engagement and disengagement. The last step focused on understanding ‘the why’ of the practices, in other words, why the project organization utilized different practices at different times (associated with the complex project’s evolving multi-stakeholder setting) to engage or disengage external stakeholders. The analysis identified altogether nine different practices used by the project organization to engage or disengage external stakeholders and four rationales as the schemes of reasoning.

3.5 Embedded single-case study (A3)

A3 employs a single-case study design (Eisenhardt, 1991) to address RQ3. A single case is justified based on the unusual case rationale that seeks to identify a case that captures the hitherto rare and unexplored circumstances and conditions of the phenomenon (Yin, 2015, p. 52). In this article, the unusual case meant identifying a rare complex project organization that actively and effectively utilizes social media in its stakeholder communication, being a suitable case for addressing RQ3 that was concerned with how a project organization of a complex project communicates effectively in social media to engage external
stakeholders. The unusual case may permit drawing inferences about the phenomenon that facilitates typical complex project organizations planning effective social media communication strategies to engage external stakeholders (cf. Siggelkow, 2007).

Following the theoretical sampling logic of unusual cases (Eisenhardt & Graebner, 2007), the following criteria were used to identify and select an unusual case. First, the case project needed to be completed so that all social media communication could be traced down, verified, and studied retrospectively for the entire case project. Second, the project organization needed to use social media actively, practically as its primary communication channel toward external stakeholders. Third, the social media communication needed to be in a language in which the researchers have sufficient proficiency. Tunnel project met the above criteria, being a suitable case for the research. Table 13 summarizes relevant contextual information of Tunnel project organization’s social media communication.

Table 13. Tunnel project organization’s social media communication.

<table>
<thead>
<tr>
<th>Social media channel</th>
<th>Tunnel project</th>
</tr>
</thead>
<tbody>
<tr>
<td>The project organization had established its official Facebook account at the beginning of the implementation phase</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Communication frequency</th>
<th>Tunnel project</th>
</tr>
</thead>
<tbody>
<tr>
<td>The project organization used Facebook very actively, at least once each working day (sometimes even during holidays and weekends) until completion of the implementation phase</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>External stakeholder adoption</th>
<th>Tunnel project</th>
</tr>
</thead>
<tbody>
<tr>
<td>The project organization did not use any other social media channels, and external stakeholders quickly adopted Facebook as the main point of contact and primary communication channel</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>External stakeholder characteristics</th>
<th>Tunnel project</th>
</tr>
</thead>
<tbody>
<tr>
<td>The social media community members are the external stakeholders who could affect the project and who were affected by the project mainly via Facebook. The social media community contained hundreds of active subscribers who responded to the project organization’s social media content. These community members also started discussion topics, posed questions, and offered feedback to the project organization. Analysis of the social media community demographics uncovered that most subscribers belonged to the project’s physical local community.</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>External stakeholder – project organization relationship</th>
<th>Tunnel project</th>
</tr>
</thead>
<tbody>
<tr>
<td>The social media community and project organization had a cooperative relationship in general. The social media community did not include any strong or visible opposition groups except for a few individuals.</td>
<td></td>
</tr>
</tbody>
</table>

The single-case study followed the theory-testing case research, which is explained briefly in the following by referring to Ketokivi and Choi (2014). In theory-testing case research, the purpose is to contextualize and test the logic of a general theory in relation to the empirical context and phenomenon. The previous is achieved by identifying an applicable general theory used to derive testable hypotheses for empirical research so that the general theory seeks a sense of generality, while the empirical context and phenomenon seek situational groundedness. The testable hypotheses are a combination of general theory and contextual idiosyncrasies, and testing precisely the same hypotheses in a distinct context would not be useful. Context is thus a central part of the theoretical logic of the testable hypotheses. The general theory is contextualized before empirical testing and analysis, unlike in theory-elaborating case research, where contextualization occurs during the data analysis. Hence, the form of scientific reasoning is mainly deductive.
A3 relies on uses and gratifications theory (UGT) as the general theory, as described in detail in section 2.5.3.

### 3.5.1 Data collection: Facebook data

A3 had an embedded design with two units of analysis (Yin, 2015, p. 53). The project organization is the main unit focused on stakeholder communication in social media, and the social media message is the logical embedded unit. The embedded units were analyzed to address the derived hypotheses, after which the results were compiled and discussed to address the main unit of analysis and RQ3.

Social media data was collected from Tunnel project’s official Facebook account’s webpages. The project organization’s Wall posts and comments were systematically gathered, including date, raw text, pictures, videos, and links, resulting in 824 messages stored as a chronological database.

There are several benefits for using social media data to study communication that justify its relevance as the data source in A3. Compared to other often used data sources in case studies, including interviews, documents, and even surveys, social media data are an accurate and transparent source of information for studying stakeholder communication. Social media data includes literal communication and all communication can be traced and verified. This kind of data provides information on both the project organization’s communication and stakeholders’ reactions, which facilitates inferring mechanisms related to how the different contents of communication achieve different number and types of social media reactions from the community (i.e., determining communication effectiveness when the goal is to achieve as many reactions from external stakeholders as possible). Social media data is not produced by the case study, which is an advantage because researchers do not intervene in the study setting during data collection, and study subjects are unaware that they are being studied. These significantly mitigate researcher bias and the Hawthorne effect. While the unawareness of study subjects can be considered an ethical concern, no personal data was stored or studied in A3.

### 3.5.2 Data analysis: regression analyses

Multiple variables were measured from the database for testing the hypotheses. The measured independent, control, and dependent variables are summarized in Table 14 with necessary explanations. The operational measures were derived from existing research regarding stakeholder engagement and communication on social media to ensure that verified measures were adopted for the study concepts. Detailed reasoning related to the operational measures is provided in A3.

---

4 Researcher bias means situations where a researcher intentionally or unintentionally influences the data or findings.
Table 14. The study variables in A3.

<table>
<thead>
<tr>
<th>Variables</th>
<th>Descriptions</th>
<th>Codifications and measurement</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>DEPENDENT</strong></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
| Engagement level         | Continuous variable (proxy): the sum of three verified indicators for measuring social media community members’ engagement level from a single message (aggregate). A natural logarithm transformation was applied due to nonlinear variable relationships                                                                                                                                                                                      | • N of discrete Facebook reactions to a message  
• N of comments on a message  
• N of shares, including user tags on a message                                                                                                                                                                                                                             |
| **INDEPENDENT**          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                                                                                                                                                                                                                                                  |
| Publication topic        | Categorical variable: a metric developed and tested to measure organizations’ information disclosure in social media. Used for measuring informational content (H1a-H1c) and relational content (H4a: customer support)                                                                                                                                                                                                 | Dummy variables for each topic, since multiple topics can be covered in a single message:  
• Environmental issues  
• Social issues  
• Economic issues  
• Technical issues  
• Governance / management issues  
• Customer support issues                                                                                                                                                                                                                                                                                                           |
| Opportunity to influence | Dichotomous variable: derived from existing conceptualization of remunerative content to measure whether a message offered possibilities to influence (votes, competitions, feedback requests) project implementation. Used for measuring remunerative content (H2)                                                                                                                                                                                                 | Binary variable:  
• Provides opportunities ‘1’  
• Does not provide opportunities ‘0’                                                                                                                                                                                                                                                                                          |
| Audiovisual              | Categorical variable: each message includes text, pictures, video, links, or some combination of these. Used for measuring entertaining audiovisual content (H3a)                                                                                                                                                                                                                                                                 | Dummy variable for each form of communication:  
• Text ‘0’ or ‘1’  
• Picture ‘0’ or ‘1’  
• Video ‘0’ or ‘1’  
• Link ‘0’ or ‘1’                                                                                                                                                                                                                                                                                                               |
| Humor                    | Dichotomous variable: derived from existing conceptualization of entertaining content to measure whether a message included humorous content (jokes, sarcasm, emoji, emoticons). Used for measuring humorous, entertaining content (H3b)                                                                                                                                                                                                 | Binary variable:  
• Humorous content included ‘1’  
• No humorous content included ‘0’                                                                                                                                                                                                                                                                                           |
| Interaction stimulation  | Dichotomous variable: derived from existing conceptualizations of relational media content to measure whether a message stimulated interaction (posing questions, offering discussion topics). Used for measuring relational content (H4b)                                                                                                                                                                                                 | Binary variable:  
• Stimulates interaction ‘1’  
• Does not stimulate interaction ‘0’.                                                                                                                                                                                                                                                                                           |
| **CONTROLS**             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                                                                                                                                                                                                                                                  |
| Message length           | Continuous variable: longer messages may contain more content and influence the level of engagement                                                                                                                                                                                                                                                                                                                                                      | • N of characters (length of links was subtracted to avoid biases)                                                                                                                                                                                                                                                               |
| Communication tone       | Categorical variable: different topics may be discussed in a different tone, which is likely to influence social media engagement behavior                                                                                                                                                                                                                                                                                                           | Generic semantic analysis, where categories are mutually exclusive:  
• Positive ‘0’ or ‘1’  
• Negative ‘0’ or ‘1’  
• Neutral (baseline) ‘0’ or ‘1’                                                                                                                                                                                                                                                                                                      |
| Publication day          | Dichotomous variable: the majority of social media activities are undertaken during working days, which influences social media engagement behavior                                                                                                                                                                                                                                                                                        | Binary variable:  
• Weekdays (Mon-Thu) ‘1’  
• Weekends (Fri-Sun) ‘0’                                                                                                                                                                                                                                                                                                            |
| Publication year         | Categorical variable: different project implementation periods may influence project organization’s communication and community’s behavior                                                                                                                                                                                                                                                                                         | Dummy variable for each year:  
• 2014 ‘0’ or ‘1’  
• 2015 ‘0’ or ‘1’  
• 2016 ‘0’ or ‘1’  
• 2017 ‘0’ or ‘1’                                                                                                                                                                                                                                                                                                              |
Multiple linear regression (MLR) models were used to analyze the data since this estimator had yielded good model fit results in similar kinds of studies (cf. Dolan et al., 2019). Post-estimation diagnostics (F-test, Breusch-Pagan, Ramsey RESET, VIF, Kernel density) indicated a good model fit, justifying the use of MLR in A3. However, mixed-effects regression models were also used to test for variation over the years and variation between Wall post and comment level. The first analysis indicated no significant variation over the years (ICC – 0.00), but the second analysis showed significant variation between the levels (ICC – 0.74). Therefore, Wall post (N = 564) and comment (N = 260) levels were analyzed separately as two subsamples. All regression analyses were performed using Stata/MP 15.0 statistical software.

### 3.6 Methodological limitations and remedies

No research design, method, or analysis procedure is perfect in social sciences. While each method is limited in its ability to gather valid and reliable information, every analysis procedure is limited in its ability to develop a valid and reliable explanation. Naturally, the research designs, data collection methods, and analysis procedures used in A1-A3 included methodological limitations that hindered the findings’ validity and reliability. The following subsections address the methodological limitations and discuss the remedies that were utilized to mitigate their effects. The used methodological remedies facilitated ensuring that the dissertation articles’ observations accurately describe the respective study phenomenon (validity) and that the findings are reliable.

#### 3.6.1 Validity and reliability of the case study research

Case study research is often criticized for its limited ability to generalize the findings because case studies typically focus on a very limited number of cases (e.g., datapoints) that are often outnumbered by the number of variables (e.g., construct, concepts) being studied (Yin, 2013). Case studies have also received criticism for their ability to demonstrate the validity of the findings. That is, case studies often have challenges explaining how (causal) relationships and outcomes have been interpreted and then demonstrate that such interpretations are ‘correct’ (Yin, 2013). Besides, case studies are typically criticized for their lack of operational measures and subjectivity in confirming preconceived notions, which also introduces challenges with reliability, as subjectivity limits the ability to replicate the study with the same results (Flyvbjerg, 2006).

For assessing the quality of case studies, Yin (2015, p. 45) has proposed a general set of criteria, including construct, internal and external validity, and reliability. Additionally, Yin (2015, pp. 45-49) has identified several tactics (i.e., best research practices) for ensuring that a case study meets these criteria and combats the common limitations described above. Table 15 explains these criteria and summarizes how the dissertation and its articles have utilized the tactics to meet these criteria and address the common validity and reliability limitations of case study research.
A typical limitation of interviews is that the interviewees provide an individualistic and often biased explanation of the study phenomenon and context, which
leads to difficulties in validating the data and then again explaining the phenomenon (Alvesson, 2003). Also, documents can include biases since they are not objective as often believed, but they are produced for specific purposes with specific intentions (Yin, 2015, p. 107). The following remedies were considered in A1 and A2 to mitigate the above limitations.

Both articles relied on the purposive sampling of informants to identify informants who were best positioned to address issues related to the research phenomenon (Robinson, 2014). A2 also utilized the snowball sampling method to identify additional knowledgeable informants (Biernacki & Waldorf, 1981). In both articles, multiple informants were interviewed from different organizations in different roles, and the different interviewees’ narratives were compared for similarities and differences to build a coherent account of the study phenomenon and context. However, as the two data sources may have been biased, the two articles relied on data triangulation (Yin, 2015, p. 121). The interviews were triangulated with the documents and vice versa to validate the information of events and activities.

Interviews may also be biased due to poorly formulated questions that may intentionally or unintentionally force the interviewee to give what the interviewer wants (i.e., researcher bias) (Yin, 2015, p. 107). Interviews may also suffer from the Hawthorne effect as interviewees might alter their behavior and offer biased responses due to their awareness of being study subjects (e.g., the effect of recording interviews). To mitigate the researcher bias, both A1 and A2 relied on a carefully planned, semi-structured, and agreed interview procedure that was tested and adjusted after the first few interviews. In response to the Hawthorne effect, the interviews in both articles aimed to establish and maintain an informal, confidential, and communicatively active atmosphere, for instance, by guaranteeing interviewees’ anonymity and data confidentiality.

A3 utilized social media data. There were several benefits of using this kind of data compared to, e.g., interviews and documents for studying the research phenomenon (discussed in section 3.5.1). However, the data also contained three limitations that were, unfortunately, beyond the researchers’ control since social media data is not produced by the case study.

First, the project organization’s official Facebook account’s communication data may be biased due to, e.g., communication filtering and lack of informal communication content. Second, the data likely suffer from self-selection bias. Before the empirical research, the users had already clicked ‘follow’ on the project organization’s official Facebook account and participated in the communication, which means that the sampling could not be controlled. This likely means that the social media community (external stakeholders) represented only those individuals who habitually communicate via social media channels. For example, as a self-selecting group, these individuals might be more inclined to react to certain kinds of communication, such as positive communication. It might be more legitimate to support positive themes and issues on the project organization’s social media channel than to criticize them. Third, Facebook’s EdgeRank filtering algorithm that selects content for user feeds may include ad-
ditional selection bias. It was not possible to obtain access to control what communication is seen by which members of the social media community. However, a relatively recent study by Lee and colleagues (2018) showed that correcting the selection bias should not influence the findings remarkably because the filtering algorithm had no substantial impact on engagement behavior.

3.6.3 Analysis procedures

A1 utilized conventional content analysis to analyze the raw data and develop concepts about the organizing solutions used for organizing external stakeholder engagement. The purpose was to develop a middle-range theory about the study phenomenon. However, conventional content analysis is limited in its ability to generate theory. The analysis procedures that climb the ladder of abstraction from raw data to concepts hinder inferring the concepts’ theoretical relationships (Hsieh & Shannon, 2005).

For mitigating the above limitation, the analysis relied on abductive reasoning and external theory to theorize and develop propositions about the posited conceptual relationships. The previous means that conventional content analysis was not used to build the middle-range theory, but rather to develop the concepts, the building blocks of the theory, to which it is well-suited (Hsieh & Shannon, 2005).

Also, the analysis in A1 included investigator triangulation that helped mitigate my personal biases as a single researcher interpreting and analyzing qualitative data (Farquhar et al., 2020). While I was the principal researcher analyzing the data, Aaltonen also participated in data analysis. I presented emerging findings from the within-case analyses on multiple occasions, and Aaltonen offered her interpretation and perspective as she had deeper insights into the interview data due to being present in the interviews. We discussed the emerging findings multiple times and reconciled our perspectives to develop the final theoretical concepts describing the organizing solutions. Similarly, we jointly developed the middle-range theory that combined the general theory with the empirically derived organizing solutions.

A2 relied on thematic analysis, which is a flexible analysis procedure allowing a wide range of themes and issues to emerge from qualitative data (Braun & Clarke, 2006). While this is undoubtedly an advantage, as briefly described in section 3.4.2, qualitative data is often overwhelming. It may be challenging to identify where to focus on and develop theoretical arguments, particularly if the study is inductive, like in A2. For mitigating this limitation, A2 utilized stakeholder theory as a theoretical lens that anchored the theoretical claims concerning the identified practices and rationales. The previous follows the suggested remedy by Braun and Clarke (2006) about anchoring analytical claims through a theory that helped interpret theoretical arguments beyond mere description. Also, it is essential to mention that thematic analysis is limited in its ability to generate process understanding, and it might not be alone sufficient for longitudinal data analysis as it addresses the structure (conceptual categories) of the phenomenon. To mitigate this limitation, A2 relied on the narrative strategy of
theorizing from process data (Langley, 1999). The previous means that a detailed narrative was constructed from the raw data, focusing on the chronology of events, activities, arrangements, and their relationships. The chronological narrative helped develop a detailed process understanding of the practices, rationales, and underlying relationships (i.e., temporal sequence and mechanisms), fitting well with the inductive approach.

A2 also relied on investigator triangulation in two different ways, as suggested by Decrop (1999), to mitigate my personal biases in interpreting and analyzing qualitative data. First, multiple researchers (Lehtinen, Aaltonen, Rajala) participated in data analysis. While I was the leading data analyzer, Aaltonen and Rajala offered their interpretations of the data and challenged my perspective on the emerging findings (i.e., ‘devil’s advocate’). The different researchers’ perspectives and interpretations were reconciled to refine the final arguments. Second, a formal validation workshop was organized with a focal organization of the case project to discuss the initial findings of the research (i.e., ‘member checking’). The workshop participants’ views and experiences resonated with the findings, offering corroboration for the analysis. The final version of the article was also sent for review to the same organization with an opportunity to provide final comments on the findings (no further comments were received).

A3 utilized MLR as the primary estimator in quantitative data analysis. The data exploration phase indicated nonlinear relationships between the dependent and independent variables, which is why a natural logarithm transformation was applied to the dependent variable. However, MLR is limited in its ability to estimate and predict nonlinear variable relationships. To mitigate this limitation and guarantee the robustness of the findings, alternative, suitable estimators (generalized linear models: negative binomial, Poisson regression) were utilized to account for the nonlinear relationships between independent and dependent variables. The alternative estimators yielded similar findings.

Two other robustness checks were performed to enhance the validity and reliability of the MLR analysis. First, an MLR model was included without the variables interaction stimulation and opportunity to influence that had low mean values in the sample, possibly causing bias in the estimates. Second, an MLR model was included without the control variable publication year, which had a highish VIF value (the only value over 2.75), potentially causing some collinearity bias. These two robustness checks offered similar findings.

Another limitation of MLR relates to predicting causal mechanisms. Regression analyses, including MLR, are concerned with correlation (dependencies among variables) that do not imply causation. The previous means that MLR is very limited in its ability to address causal mechanisms. Although this limitation cannot be overcome completely, it was mitigated by addressing prominent alternative explanations both in statistical procedures (control variables) and theoretical discussion that supported the validity of the findings.

The last limitation in A3 relates to measuring the study variables. Most variables in A3 were directly measurable, but some (e.g., communication tone, interaction stimulation, opportunity to influence) were interpretative, and they were coded qualitatively. The researcher’s personal biases may thus influence these
variables. To enhance the measures’ validity and reliability, A3 utilized investigator triangulation (Farquhar et al., 2020), where amendments and common guidelines were developed together and agreed for the qualitative coding after pilot coding.
4. Research findings

This section presents the empirical findings of this dissertation. Section 4.1 summarizes and explains the primary findings from each dissertation article for addressing RQ1-RQ3. The purpose of these summaries is not to describe and justify all the details because such details are elaborated within each article with extensive empirical evidence. After that, section 4.2 synthesizes the findings to address the overarching RQ.

4.1 Primary findings from dissertation articles

4.1.1 Organizing external stakeholder engagement (A1)

How do multiple autonomous organizations, forming a project organization, jointly organize external stakeholder engagement in the context of complex projects?

A1 identified three organizing solutions that case projects’ organizations used in organizing external stakeholder engagement, governance-based, value-based and dynamism-based solutions. These are explained in the following and how they contributed to solving the four universal challenges of organizing external stakeholder engagement.

Governance-based solutions formed the foundation and basic structure for organizing external stakeholder engagement. These solutions were implemented in the early phases of the case projects, and they were in place throughout their lifecycles. Governance-based solutions consisted of engagement activities, organizational structures, and engagement indicators.

Engagement activities included the tasks that the project organization had used for engaging external stakeholders. Hence, engagement activities addressed the challenge of task division. The project organizations used four main types of engagement activities to achieve both the breadth and depth of engagement: information distribution, information events, interactive events, and invited visits.

Information distribution meant sending out project bulletins, press releases, and other handouts physically and via the project’s webpages to reach a wide range of external stakeholders. Information events, in turn, were periodically organized events where the project organizations invited external stakeholders.
In these events, the project organization communicated and disseminated information about the project and was ready to address external stakeholders’ questions and concerns. However, the emphasis was on delivering information. Conversely, interactive events included workshops with specific external stakeholders to facilitate dialogue. In these interactive sessions, external stakeholders were considered as inputs to help solve specific issues. Lastly, invited visits included events and tours at the construction site and project’s office where external stakeholders could transparently see on-going implementation and ask anything about the project.

Organizational structures meant the organizational bodies and roles that implemented engagement activities. Thus, organizational structures were the necessary solution to address task allocation. These structures were explicitly inter-organizational, as the representatives from different actors (e.g., client, contractor, designer, engineer) of the project organizations formed these bodies. For example, both case project organizations had established a cross-organizational communication team (working group) that included specific individual roles and responsibilities concerning external stakeholders and their engagement. These bodies were primarily in charge of external stakeholder engagement.

Engagement indicators included jointly designed and agreed goals and their indicators for external stakeholder engagement, which the project organizations used to measure the results of external stakeholder engagement. These indicators aimed to follow the quality of relationships and help design further engagement activities to reach the goals. For instance, Tunnel project organization had included external stakeholder engagement in the alliance contract’s key results areas with positive publicity as an indicator, while Railway project had other objectives related to external stakeholders. Both projects’ personnel were motivated to follow the indicators and strive to reach the engagement goals, as there were contractual bonuses and sanctions connected to achieving these goals. Thus, engagement indicators contributed to the challenge of reward provision, as they motivated personnel to execute engagement tasks through bonuses and sanctions.

Value-based solutions were the values that made external stakeholder engagement meaningful and important to case project organizations. These values were set in the case projects’ early front-end phases and internalized during their project implementation phases. Value-based solutions consisted of engagement values and practices for internalizing those values.

Engagement values stood for the project organization’s community spirit that enabled trust and collaboration with external stakeholders. The desired community spirit facilitated respecting external stakeholders’ interests and engaging them genuinely. A concrete example was the best for the project principle that both case project organizations utilized. The principle was a codified rule, which meant that, instead of optimizing work for someone’s parent organization, every project organization member (individual) should work toward the joint goal of achieving project outcomes and objectives in their everyday activities and decisions. That is, for achieving outcomes that also benefitted external stakeholders and required their genuine engagement.
Practices for internalizing the engagement values included the project organization’s internal events and activities dedicated to imprint the community spirit. For example, both case project organizations used the Big room, where the personnel gathered together to execute project work in the same location that supported developing a collaborative and trusting work culture. Also, the project organizations utilized training dedicated to building the desired community spirit.

Value-based solutions were thus associated with addressing reward provision since the values and internalizing practices motivated personnel to engage external stakeholders.

**Dynamism-based solutions** were associated with the temporality of organizing external stakeholder engagement. The dynamism emerged during the project implementation phases of the case projects. Dynamism-based solutions included flexibility in everyday activities, timely focus on relevant activities, and communication systems.

Flexibility in everyday activities simply meant that all personnel had flexible responsibilities and roles that secured effective external stakeholder engagement. Although there were specific teams, roles, and responsibilities for engaging external stakeholders, in practice, any member of the project organization could suggest ideas for external stakeholder engagement, even if this was not included in their original work duties. Also, it could certainly be that external stakeholders contacted personnel who were not part of the communication team with urgent matters that required immediate attention. On these occasions, the flexibility ensured the appropriate and timely engagement of external stakeholders.

Timely focus on relevant activities meant that the project organizations’ members focused on actively collaborating with external stakeholders to solve problems and issues, rather than arguing with, ignoring, or blaming them. When confronted by external stakeholders, the project organization members sought swiftly to select the most appropriate and timely way of engaging them. The timely focus on relevant activities can be considered the manifestation of the value-based solutions, as the desired community spirit enabled the above-described actions of the project organizations’ members.

Flexibility in everyday activities and timely focus on relevant activities contributed to addressing task allocation, as personnel had flexible roles in making quick and timely decisions and actions regarding external stakeholder engagement.

As its name implies, communication systems meant the different technical arrangements that enabled unimpeded access to information necessary for external stakeholder engagement. For example, in both case projects, the project organizations gathered feedback continuously from external stakeholders, which they utilized in designing further engagement activities. In addition to this, there were standard ICTs in use that the project organizations also used for organizing external stakeholder engagement. Therefore, communication systems facilitated solving provision of information.
The three organizing solutions are summarized in Figure 4, with descriptions of their mechanisms for solving the four universal challenges of organizing external stakeholder engagement in complex projects.

![Figure 4](image)

**Figure 4.** Summary of A1 findings, adapted from (Lehtinen & Aaltonen, 2020).

### 4.1.2 Practices and rationales for dis/engagement (A2)

*How does a project organization of a complex project engage and disengage external stakeholders over the project's lifecycle, and why?*

A2 identified nine practices that Tapiola project’s organization used to either engage or disengage external stakeholders over the project’s lifecycle. The anal-
ysis also identified four rationales as the schemes of reasoning for timely engaging and disengaging external stakeholders. These are summarized in the following, by first explaining the practices and then the rationales.

The first practice, **establishing a joint decision-making organization**, was used to engage and disengage external stakeholders during the project’s early front-end phase. The project organization members (actors) formed Tapiola Area Development (TAD) as a joint decision-making body to advance the early front-end project planning. This organ formalized the boundaries between the project organization and external stakeholders. As a closed decision-making body, the project organization used TAD to disengage external stakeholders (particularly local community, end-users, Tapiola residents’ association) from the early decision-making, idea creation and planning. While the project planning was modest initially, the project organization’s actors recognized that it would be easier to keep it inside closed doors instead of trying to satisfy all stakeholders yet.

Additionally, TAD represented the project organization’s collective interest and not just some of its members’ interests. TAD was used as a communication channel toward authority-related external stakeholders who acted as gatekeepers (i.e., approving or disapproving planning ideas) during the project’s early front-end planning. Hence, TAD was used to engage authority-related external stakeholders during the early front-end phases.

The second practice, **reference planning tool**, was developed at the beginning of the formal planning phase. The project organization invented a novel tool called reference planning that was used throughout the project’s lifecycle. This tool depicted the project and its different phases as a ‘big picture’ in 2D and 3D formats. The big picture was updated continuously, and it was openly accessible through a website. The project organization used the tool to demonstrate to external stakeholders how Tapiola would look in the future in various stages with alternatives. External stakeholders then had the opportunity to provide feedback for the planning. The project organization used this tool predominantly for engaging external stakeholders.

The third practice, **master planning tool**, was developed soon after the reference planning tool. The reference planning tool was an abstract representation of the project, lacking several details required by the authorities to grant building permissions. The project organization developed the master planning tool that included an in-depth analysis of Tapiola district with the necessary details. The project organization actively used the tool to defend, argue, and justify the planning and made decisions to authority-related external stakeholders. Hence, the project organization primarily used the tool to disengage external stakeholders, as the defense helped avoid excessive opposition, bureaucracy, and changes to planning.

The fourth practice, **engagement platforms**, was developed during the late planning phase. The project organization recognized that due to the highly controversial nature of the project’s context, there was too much opposition from several external stakeholders. It was impossible to defend the governance with
the master planning tool alone and gain acceptance from authorities and proceed to project implementation. The project organization invited external stakeholders to several different seminars and workshops to discuss project planning and essential issues to reach compromises. Thus, external stakeholders had opportunities to influence the project and, together with the project organization, resolve issues to proceed with the planning. These platforms were a straightforward and transparent way of engaging a wide range of external stakeholders.

The fifth practice, **neglecting queries**, was used concurrently with the fourth practice. The project organization realized that while the engagement platforms facilitated the project’s progression, they also had their share of downsides. Too broad and transparent engagement of external stakeholders resulted in some impasses in decision-making as it was not feasible to meet every stakeholder’s interests, especially regarding economic factors (e.g., financial factors, floor and square meter prices, total construction volume). To finalize the planning, the project organization had to selectively ignore some more critical queries from external stakeholders and not completely transparently tell all the details. This kind of selective disengagement of external stakeholders enabled proceeding with the planning phase.

The sixth practice, **champions**, was used during the late planning phase. The project organization realized that meeting different stakeholder demands was difficult, requiring compromises from each stakeholder. The negotiations with authorities often resulted in cul-de-sacs, and end-users, the local community, and the residents’ association were very obdurate. Hence, the project organization started utilizing capable and prestigious individuals (e.g., a famous architect and professor, respected by external stakeholders) as champions that could arbitrate the divergent stakeholder interests. The champions both engaged and disengaged the external stakeholders. They opened up discussions and provided opportunities to influence but simultaneously defended the plans and how they already considered the district’s cultural and historical heritage. The champions enabled finalizing the planning and entering the implementation phase regarding the first part of the project.

The seventh practice, **theses for development**, was invented during the early implementation of the first part and planning of the second and third parts of the project. The opposition from the external stakeholders remained strong and resulted in authorities disapproving of the project and town plans for the second and third parts of Tapiola project. The project organization recognized that they need to enhance the engagement of external stakeholders to overcome the opposition. In practice, this meant integrating external stakeholders’ interests (cultural heritage of Tapiola) better in future planning. The project organization devised and published a pamphlet called Tapiola Development Theses that were a strict, common guideline (i.e., ground-rule) for further planning. The theses explained a new planning direction that would consider the cultural and historical heritage of Tapiola seriously.

The eighth practice, **negotiations**, was developed shortly after the theses during the implementation phase and was carried out until early operations. Even though project and town plans were finalized, several details were still up
for debate. The project organization realized that they must organize personal meetings and negotiations with authority-related external stakeholders to avoid further halts in project activities. The project organization organized several meetings and workshops with authorities to engage them and ensure benefits for all stakeholders.

The ninth practice, **systematic feedback**, was implemented during the operations phase. The second part of the project was nearly completed, and the project organization recognized that there is a need to engage external stakeholders who are important for the new district’s operations. The project organization organized a large-scale, systematic survey through a consultant company. The survey collected data and gathered feedback from various end-users and customers. The purpose was to engage these external stakeholders in the decision-making to develop the district’s current and future commercial profile and atmosphere.

A2 also analyzed the rationales for using the above-described practices over the project’s lifecycle. Four rationales were identified, framing, legitimizing, maintaining, and expanding related to the complex project’s lifecycle, justifying using a specific set of practices for engaging and disengaging external stakeholders.

**Framing the project** occurred during the early front-end phase, and it included the two first practices that the project organization used to frame the complex project’s identity. The framing process involved a limited set of stakeholders, with whom the project organization sought to develop the joint project goal and concept. Since TAD was established, there were strict boundaries between the project organization and external stakeholders supporting the internal framing process. After the initial project concept was framed, the project organization began slowly growing the organizational boundaries as they started to engage external stakeholders and their ideas through the reference planning tool. This opening of the boundaries also facilitated the project organization to frame the project toward external stakeholders.

**Legitimizing governance** occurred during the planning of the project and included the second and third practices. The two planning tools helped the project organization legitimize the project’s governance structure, as the tools formalized the project organization’s role as the project’s key designer and architect. Also, the tools implied that the project organization would strictly control external stakeholders’ inputs. The project organization used the master planning to disclose information to external stakeholders and defend the governance, indicating that the project organization was the central designer of the complex project. In turn, the reference planning offered symbolic roles for external stakeholders, who could provide feedback but mainly for supporting the project organization’s purposes. The tools practically governed the relationships and interaction between the project organization and external stakeholders.

**Maintaining interaction** occurred during the late planning and early implementation phases and included the fourth, fifth, and sixth practices. The project organization created urgency for collaboration with external stakeholders but concurrently indicated that certain decisions and activities are taken care of
Research findings

by the project organization. Such behavior activated external stakeholders and maintained higher interaction levels, facilitating the complex project’s progression. Engagement platforms offered clear input and influencing windows to external stakeholders, formalizing a scheduled ‘gate-based’ participation process over specific essential issues. The platforms also highlighted to external stakeholders that their engagement could have positive social and environmental implications in the project, sustaining the interaction. However, the timely disengagement of external stakeholders through neglecting queries was crucial to create urgency and motivate and mobilize external stakeholders, which supported vivid interaction around the essential issues. Ultimately, to balance the engagement and disengagement, the project organization utilized the champions that were pivotal in balancing and arbitrating the different interests. These three practices facilitated maintaining high levels of interaction with external stakeholders, which was crucial to finalize the planning and enter the implementation phase.

**Expanding governance** occurred during the late implementation and early operations phases, and it included the seventh, eighth, and ninth practices. At this point in the project lifecycle, all major decisions and issues had been resolved, meaning that the project organization could expand the governance by increasing the engagement of external stakeholders in activities and decision-making. In practice, the project organization empowered specific external stakeholders with design and decision-making rights for the complex project regarding remaining medium and minor issues without creating too much uncertainty or complexity for the project’s timely progress. For example, the theses were a straightforward way of showing that external stakeholders’ interests and goals mattered for the project, enhancing the value of cooperation. In turn, the negotiations offered transparent ways for external stakeholders to influence remaining minor to medium issues, supporting mutual value creation. Lastly, gathering systematic feedback was an effective way of showing that external stakeholders’ contributions were needed for the project’s long-term operations. These practices contributed to finalizing the project in a way that secured benefits and value for both the project organization and its external stakeholders.

The described practices and rationales are summarized in Figure 5 over the project’s lifecycle phases.
Effective social media communication (A3)

How does a project organization of a complex project communicate effectively in social media to engage external stakeholders?

A3 tested the developed hypotheses in two subsamples, comment and Wall post subsamples, using the following MLR model:

\[
\text{Ln(Engagement level)} = \beta_0 + \beta_1 \text{Publication topic}_i + \beta_2 \text{Opportunity to influence}_i + \beta_3 \text{Audiovisual}_i + \beta_4 \text{Humor}_i + \beta_5 \text{Interaction stimulation}_i + \beta_6 \text{Message length}_i + \beta_7 \text{Communication tone}_i + \beta_8 \text{Publication day}_i + \beta_9 \text{Publication year}_i + \epsilon_i. 
\]

The MLR for the comments subsample indicated severe violations of linear regression assumptions and failed to reject the null hypothesis of the overall F-test. Alternative estimators (negative binomial, Poisson regression) also resulted in completely misspecified models. Therefore, the findings for the comments subsample were not interpreted any further.

A likely explanation for the misspecified models is that Tunnel project organization’s communication at the comment level was practically only reactive. In other words, all comments from the project organization replied to messages from individual community members who had already decided to communicate about some specific content. The project organization’s responses were thus not
oriented to engage the broader audience of community members and achieving the breadth of engagement but to reply to a single member. Though, it may be that this response engaged the particular member effectively, achieving the depth of engagement. However, this cannot be verified from the current analysis because a different measurement model (and theoretical assumptions about the phenomenon) would be required to confirm or reject this observation. For example, a model that measures whether the project organization’s response received a reaction or comment back from the same member who first contacted the project organization, being an indicator of the depth of engagement of that particular member. Nevertheless, the project organization’s comments did not attract comments, reactions, or shares the same way as Wall posts that were designed to engage a wide range of social media community members. Hence, the comment level did not reflect the theoretical assumptions of the hypotheses.

The post-estimation diagnostics for the Wall post subsample indicated a well-specified MLR model. Table 16 summarizes the primary findings from A3.

Table 16. Summary of A3 findings: MLR model for the Wall post subsample, adapted from A3.

<table>
<thead>
<tr>
<th>Variable</th>
<th>Coeff.</th>
<th>p-value</th>
<th>Hypothesis</th>
<th>Effect size</th>
<th>Conclusion</th>
</tr>
</thead>
<tbody>
<tr>
<td>Social issues</td>
<td>0.169</td>
<td>0.028**</td>
<td>H1a</td>
<td>+16.9%</td>
<td>Hypothesis fully supported: Acceptance</td>
</tr>
<tr>
<td>Environmental issues</td>
<td>-0.296</td>
<td>0.000***</td>
<td>H1b</td>
<td>-29.6%</td>
<td>Hypothesis partially supported: Rejection</td>
</tr>
<tr>
<td>Economic issues</td>
<td>0.172</td>
<td>0.019**</td>
<td>H1c</td>
<td>+17.2%</td>
<td>Hypothesis fully supported: Acceptance</td>
</tr>
<tr>
<td>Governance management issues</td>
<td>-0.165</td>
<td>0.419</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Technical issues</td>
<td>0.036</td>
<td>0.672</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Customer support</td>
<td>-0.354</td>
<td>0.001***</td>
<td>H4a</td>
<td>-35.4%</td>
<td>Hypothesis partially supported: Rejection</td>
</tr>
<tr>
<td>Opportunity to influence</td>
<td>-1.008</td>
<td>0.020**</td>
<td>H2</td>
<td>-110.8%</td>
<td>Hypothesis partially supported: Rejection</td>
</tr>
<tr>
<td>Text</td>
<td>-0.100</td>
<td>0.560</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Picture</td>
<td>0.721</td>
<td>0.000***</td>
<td>H3a</td>
<td>+72.1%</td>
<td>Hypothesis fully supported: Acceptance</td>
</tr>
<tr>
<td>Video</td>
<td>1.114</td>
<td>0.000***</td>
<td>H3a</td>
<td>+111.4%</td>
<td>Hypothesis fully supported: Acceptance</td>
</tr>
<tr>
<td>Link</td>
<td>0.233</td>
<td>0.030**</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Humour</td>
<td>0.288</td>
<td>0.041**</td>
<td>H3b</td>
<td>+28.8%</td>
<td>Hypothesis fully supported: Acceptance</td>
</tr>
<tr>
<td>Interaction stimulation</td>
<td>-0.055</td>
<td>0.887</td>
<td>H4b</td>
<td>-5.5%</td>
<td>Hypothesis not supported: Rejection</td>
</tr>
<tr>
<td>CONTROL VARIABLES</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Message length</td>
<td>0.000</td>
<td>0.906</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Positive</td>
<td>0.301</td>
<td>0.000***</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Negative</td>
<td>0.186</td>
<td>0.774</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Publication day</td>
<td>-0.049</td>
<td>0.478</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Year 2014 (baseline)</td>
<td>0.000</td>
<td>.</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Year 2015</td>
<td>0.352</td>
<td>0.016**</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Year 2016</td>
<td>0.518</td>
<td>0.000***</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Year 2017</td>
<td>0.857</td>
<td>0.000***</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Constant</td>
<td>1.810</td>
<td>0.000***</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>N of observations</td>
<td>564</td>
<td>Ramsey RESET (Prob &gt; F) 0.2314</td>
<td>Ramsey RESET (Prob &gt; F) 0.2314</td>
<td>Breusch-Pagan (Prob &gt; chi2) 0.8559</td>
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<tr>
<td>F (20,543)</td>
<td>14.351</td>
<td>Mean DV 2.838 (SD 0.776)</td>
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<td>Prob &gt; F</td>
<td>0.000</td>
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<tr>
<td>R-squared</td>
<td>0.346</td>
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<tr>
<td>Mean VIF</td>
<td>2.17</td>
<td>*** p&lt;0.01 ** p&lt;0.05 * p&lt;0.1</td>
<td>*** p&lt;0.01 ** p&lt;0.05 * p&lt;0.1</td>
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The natural logarithm transformation of the dependent variable meant that the effects were in percentages. The transformation also provided a more comprehensible and intuitive measure of changes compared to absolute values.

The analysis offered full support for hypotheses H1a and H1c, meaning that the project organization’s Wall posts about social issues increased the external stakeholders’ (social media community members’) engagement level (comments, reactions, and shares) by 16.9%. In comparison, Wall posts about economic issues increased the engagement level by 17.2%. However, the analysis provided only partial support for hypothesis H1b, as the effect was statistically significant, but the direction negative, meaning that Wall posts about environmental issues decreased the external stakeholders’ engagement level by 29.6%.

Next, the analysis offered partial support for hypothesis H2 since the effect was statistically significant, but the direction negative. The previous meant that the project organization’s Wall posts that offered opportunities to influence the project reduced the external stakeholders’ engagement level by 100.8%.

The analysis offered full support for hypothesis H3a, meaning that the project organization’s Wall posts that included a picture or a video increased the external stakeholders’ engagement level by 72.1% and 111.4%, respectively. Also, hypothesis H3b was fully supported, as the project organization’s Wall posts that contained humor increased the external stakeholders’ engagement level by 28.8%. Related to hypotheses H3a and H3b, Wall posts that included links increased the external stakeholders’ engagement level by 23.3%. Links often included entertaining or informational content, such as YouTube links to drone footage (aerial views of the construction site) or information about the project’s economic progress. The previous offered further support for hypotheses related to informational (H1c) and entertaining content (H3a).

Lastly, the analysis offered only partial support for hypothesis H4a, as the effect was statistically significant, but the direction negative. The previous meant that Wall posts offering general support decreased the external stakeholders’ engagement level by 35.4%. Additionally, the analysis offered no support whatsoever for hypothesis H4b, as Wall posts that stimulated interaction had no statistically significant relationship with engagement level, and the effect of direction was negative.

### 4.2 Synthesis of primary findings

**How does a project organization of a complex project implement external stakeholder engagement?**

The three dissertation articles yielded insights on external stakeholder engagement in complex projects from three different perspectives. Taking together the findings from A1-A3 offers understanding of how a project organization of a complex project implements external stakeholder engagement.

Focusing on the project organization as an entity (the organizing perspective), implementing external stakeholder engagement appears as a systematic practice that is an integral part of a complex project and its organizing (A1). The
implementation begins with setting up the necessary governance structures during the early phases of the project lifecycle. Governance structures foremost denote the organizational bodies (e.g., team(s) and personnel responsible for external stakeholder engagement), engagement activities (e.g., varying means of interacting with external stakeholders), and engagement goals and indicators (e.g., measurable objectives related to external stakeholder engagement). These function as the backbone for implementing external stakeholder engagement because they support dividing external stakeholder engagement into appropriate tasks, updating the tasks based on feedback and learning, allocating suitable personnel for the tasks, and motivating the personnel to execute the tasks.

However, as the findings showed, the realization of external stakeholder engagement also requires developing appropriate mental structures, which are maintained throughout the project’s lifecycle. Mental structures mean that project management develops and imprints a mutual understanding of external stakeholders’ importance and the value of stakeholder engagement for the complex project. It is not merely enough to have physical governance structures in place, but the members (individuals) of the project organization need to understand the value of external stakeholders and their engagement. The value can be considered intrinsic (i.e., external stakeholders are valuable ends themselves), utilitarian (i.e., utility value for successfully delivering the complex project), or both. Mental structures can be developed and achieved by devising shared values, leading by example, utilizing training, including formal incentives, and fostering a desirable community spirit within the project organization and with external stakeholders. The mental structures seem important for motivating project organization’s members to execute tasks associated with external stakeholder engagement.

Since complex projects are temporal and highly dynamic entities, implementing external stakeholder engagement also requires dynamic structures. While a project organization must have the necessary governance and mental structures in place, the project organization needs to be prepared to be flexible in addressing unexpected external stakeholder incidents, events, and activities. The previous means that any project organization member is entitled to addressing and reacting to external stakeholders’ concerns and has access to requisite information to do so correctly. Interaction with external stakeholders is foremost focused on cooperation and resolving issues together with them. The dynamic structures ensure that external stakeholder engagement is implemented punctually.

Against the above discussion, I bring forward the following insight:

Proposition 1: Governance, mental and dynamic structures are an integral part of the complex project organizing, and they form the necessary organizational bedrock for a systematic approach to implementing external stakeholder engagement. The three structures facilitate dividing external stakeholder engagement into appropriate tasks, updating the tasks continuously, allocating suitable personnel to the tasks with flexible roles, autonomy and necessary information, and motivating personnel to execute the tasks timely.
When shifting the focus from a project organization to the interaction between the project organization and its external stakeholders (practice perspective), the findings showed that implementing external stakeholder engagement requires that the practices to engage external stakeholders are balanced antithetically with disengagement practices (A2). Although the organizing perspective identified a set of engagement activities used to engage external stakeholders (A1), a closer analysis of the interaction unveiled that timely disengagement of external stakeholders is a pivotal part of implementing external stakeholder engagement (A2). The interaction between a project organization and its external stakeholders thus consists of a dynamic pattern between engagement (e.g., engagement platforms, engagement guidelines, meetings, negotiations, feedback) and disengagement practices (e.g., neglecting queries, defending through planning artifacts), where some specific external stakeholders are engaged while others disengaged, even concurrently. A balance between engagement and disengagement practices can be struck with ‘balancing practices’ (e.g., champions in the case study) that are mechanisms for both engaging and disengaging external stakeholders simultaneously.

The four rationales (i.e., framing the project, legitimizing governance, maintaining interaction, and expanding governance) justify the above-described ‘pacing’ of engagement and disengagement practices. The rationales help explain why and how the project organization continuously defines the organizational boundaries and controls the interaction with external stakeholders to ensure the complex project’s timely progress in its different lifecycle phases. The focus with the rationales and timely progress is on achieving system-wide benefits, meaning benefits and value that satisfy the project organization’s needs and those of external stakeholders. However, the analysis showed that it is not feasible to satisfy every stakeholder’s requirements, at least to the same extent, meaning that compromises and prioritizing are continuously required during the project’s lifecycle, ultimately culminating in and justifying timely disengagement practices.

Based on the above analysis, I propose the following insight:

*Proposition 2: Four rationales, framing the project, legitimizing governance, maintaining interaction and expanding governance, bound to project lifecycle phases and changing stakeholder environment, provide a framework for complex project organizations to control the interaction with their external stakeholders and create value. The rationales highlight the essential role of disengagement as engagement practices are balanced and paced with disengagement practices to enable timely and appropriate implementation of external stakeholder engagement.*

When deepening the focus from the engagement and disengagement practices to the specific communication within these practices (communication perspective), the findings showed that the effective implementation of external stakeholder engagement requires a careful understanding of the target stakeholder
groups, conversation topics, and modes of communication (A3). The empirical analysis showed that conversation topics that deal with sustainability impacts (e.g., social and economic issues) of the complex project effectively engage external stakeholders in the context of social media. Communication in an entertaining way (e.g., supporting graphical material, links, humor) is also effective in engaging external stakeholders. Also, communication in a positive and helpful tone (cooperatively oriented) contributes to external stakeholders’ engagement. Surprisingly, interactive communication that offers dialogues and opportunities to influence the project was not particularly effective in engaging external stakeholders. However, it is important to note that these findings are social media context-specific, and within different engagement practices, effective communication is likely different.

Against the above discussion, I derive the following insight:

Proposition 3: Understanding the target stakeholder group(s), suitable conversation topics, and modes of communication plays a paramount role in the effective implementation of external stakeholder engagement. When looking at social media as an engagement practice, a project organization’s communication that provides information about sustainability issues, or communication that is cooperative or entertaining, effectively engages external stakeholders.
This section discusses the empirical findings of this dissertation in light of previous theory and research. The purpose is to explain how this dissertation contributes to theoretical development. The discussion is structured under three subsections. Subsection 5.1 discusses the findings in light of stakeholder theory and research by first introducing the main contribution of the dissertation and then the more detailed contributions related to the three perspectives on stakeholder engagement. Subsection 5.2 discusses how the findings advance complex project management research. Finally, subsection 5.3 discusses the findings considering the applied theories in A1 and A3.

5.1 Contribution to stakeholder theory and research

The empirical articles and synthesis of this dissertation offer new insights into stakeholder engagement in the context of complex projects and external stakeholders. The findings from the organizing perspective highlighted how three organizing solutions, governance-, value- and dynamism-based solutions, facilitate project organizations’ systematic and successful approach to organizing external stakeholder engagement in complex projects. The insights from the practice perspective demonstrated how a project organization utilizes timely practices to engage and disengage external stakeholders and how the practices change over a complex project’s lifecycle according to four rationales that justify value creation to stakeholders. Lastly, the findings from the communication perspective indicated how the effectiveness of implementing external stakeholder engagement in complex projects depends on the cautious understanding of the target stakeholder group, discussion topics, and modes of communication. The findings from the three perspectives were synthesized and crystallized in three propositions that altogether explain how a project organization can implement external stakeholder engagement effectively in a complex project.

Recently, stakeholder theorists have argued that stakeholder theory is missing in-depth, contextual understanding of stakeholder engagement, in which special attention is devoted to contextual conditions and variables through rich empirical data (Nartey, 2019; Parmar et al., 2010). Since stakeholder engagement is considered the core of stakeholder theory (Kujala & Sachs, 2019; Wicks et al., 2019), the lack of contextual knowledge regarding stakeholder engagement may
impede further development of stakeholder theory and understanding of effective stakeholder engagement (Nartey, 2019). Consequently, the main contribution of this dissertation to stakeholder theory and research is to offer new, contextual and in-depth understanding regarding stakeholder engagement in the context of complex projects and external stakeholders. This new knowledge is developed from three empirical case studies and crystallized in the synthesis and three propositions, offering a valuable foundation for developing future stakeholder theory and research regarding stakeholder engagement, especially in the contexts of complex projects and external stakeholders.

5.1.1 Contribution to organizing research on stakeholder engagement

The findings from A1 demonstrated how empirically driven organizing solutions facilitate a systematic approach to external stakeholder engagement in complex projects. The identified governance-, value- and dynamism-based solutions highlight how some best practices for external stakeholder engagement are planned and implemented in an integrated and timely manner in the project organization. These organizing solutions advance a multifaceted understanding of the pivotal decisions and activities made so that external stakeholder engagement is organized successfully, providing respect for external stakeholders and enabling value creation. Hence, these findings encourage new thinking of how stakeholder engagement can be integratively organized in a project organization regarding external stakeholders, bringing new knowledge of the best practices to stakeholder engagement in the field of complex projects.

Stakeholder theorists have called for more detailed descriptions about industry best practices for stakeholder management to develop stakeholder theory (Freeman et al., 2010, pp. 286-287). For instance, a comprehensive and in-depth understanding of how to organize stakeholder engagement systematically has been widely missing from previous stakeholder theory and research, especially in the context of complex projects. Consequently, the primary contribution of A1 is to offer a comprehensive and detailed account regarding three organizing solutions of immediate relevance that bring the organizing perspective into the research spotlight and include some best practices for organizing external stakeholder engagement in the field of complex projects.

The findings concerning the governance-based solutions demonstrated that the responsibilities and roles related to organizing external stakeholder engagement span organizational boundaries. The two empirical cases showed that the project organizations formed inter-organizational teams that integrated individuals from multiple project organization actors, including, e.g., client, contractor, engineer, and designer. These cross-organizational teams had the primary responsibility to organize external stakeholder engagement.

The previous finding is in line with previous organizing research on stakeholder engagement concerning the organization’s internal structures and procedures where specific functions, departments, teams, and other specialized roles have been established to execute activities related to stakeholder engagement (Yuan et al., 2011). However, the empirical findings demonstrated that
such internal structures and procedures are inter-organizational within the context of complex projects.

The above observation elaborates the dimension of internal structures and procedures in the context of complex projects by contradicting previous views where different roles and responsibilities are allocated to different actors of the complex project organization for systematically implementing external stakeholder engagement. For instance, previous research has emphasized that project managers are in charge of developing plans for external stakeholder engagement (Di Maddaloni & Davis, 2018; Ninan et al., 2019b), identifying and classifying external stakeholders (Aaltonen, 2011; Olander & Landin, 2005), and analyzing the stakeholder landscape (Aaltonen & Kujala, 2016). Also, earlier research has argued that while project owners have the responsibility to allocate resources to external stakeholder engagement (El-Sawalhi & Hammad, 2015) and engaging specifically authorities (Aaltonen et al., 2008), clients have overseen the overall planning and engaged specifically end-users (Mok et al., 2017b, 2017a). Therefore, the findings contribute to organizing research on stakeholder engagement by showing that the internal structures and procedures, including dedicated roles and responsibilities for stakeholder engagement, may be required to span organizational boundaries in the context of complex projects for successfully organizing external stakeholder engagement.

The findings concerning the value-based solutions showed that developing and internalizing collaboration and engagement values are a pivotal part of organizing external stakeholder engagement. These values facilitate project organization’s members to realize the value of stakeholder engagement and foster authentic collaboration with external stakeholders. Additionally, the identified engagement indicators of governance-based solutions showed how project organization’s members could be motivated to adhere to these values for engaging external stakeholders even on an extended level, which means a broader and deeper approach than typically employed.

The previous findings resonate with existing organizing research concerning the dimension of commitment, where organizational members are committed to stakeholder engagement (Baumann-Pauly et al., 2013; Wickert, 2016), and the organization has relevant, formal indicators in place for stakeholder engagement (Baumann, 2009), including incentive systems and training measures to promote awareness of issues related to stakeholder engagement (Baumann-Pauly et al., 2013).

However, organizing research has not elaborated the dimension of commitment in the context of complex projects, and research in this context has argued that implementing stakeholder engagement is very difficult in practice, requiring a fundamental change in how external stakeholders and stakeholder engagement are approached (Eskerod et al., 2015; Eskerod & Huemann, 2014; Di Maddaloni & Davis, 2018). A fundamental change can mean, for instance, novel, distinct attitudes and engaging stakeholders on an extended level.

While previous research has pointed out the need for a fundamental change, it has not offered empirical evidence about how any fundamental change is
achieved in practice. The value-based solutions and engagement indicators illustrate how developing, internalizing, and adhering to collaboration and engagement values constitute a fundamentally new, different attitude and an extended approach to external stakeholders and their engagement in complex projects. Consequently, these findings contribute to organizing research on stakeholder engagement by offering new understanding of the dimension of commitment in the context of complex projects. The findings offer novel means and empirical evidence about how a fundamental change can be achieved in approaching stakeholder engagement and external stakeholders in complex projects that facilitate implementing stakeholder engagement.

The findings concerning dynamism-based solutions offered concrete ways for managing the stakeholder dynamics of complex projects. Dynamism-based solutions increased the project organizations’ resilience when facing uncertainty caused by unexpected stakeholder events and secured relevant and timely responses to external stakeholders’ concerns. For example, the case projects illustrated how flexible roles and responsibilities concerning stakeholder engagement enabled appropriate and rapid responses to external stakeholders’ changing concerns and resistance during project implementation. The identified engagement activities (information distribution, information events, interactive events, and invited visits) of governance-based solutions also demonstrated the project organization’s concrete ways of interacting with external stakeholders, including both the breadth and depth of engagement. The engagement indicators also illustrated how engagement activities were continuously adjusted based on stakeholder interactions (feedback and learning) to suit the prevailing situation.

These findings are in line with the dimension of external collaboration in earlier organizing research on stakeholder engagement that captures the interaction and quality of relationships with external stakeholders, e.g., through engagement activities (Wickert, 2016). However, previous organizing research has not elaborated the dimension of external collaboration in complex projects as issues of contextuality, dynamism, and temporality have been neglected to a great extent. That is, stakeholder dynamics are known to pose multiple challenges for implementing stakeholder engagement in complex projects (Bakker et al., 2016; DeFillippi & Sydow, 2016; Lin et al., 2017), but only a few studies have actually addressed the issue of stakeholder dynamics in detail (Aaltonen et al., 2015). It seems that empirical evidence and knowledge of the potential remedies to deal with stakeholder dynamics is lacking. Therefore, the above findings contribute to organizing research on stakeholder engagement by offering novel understanding of the dimension of external collaboration in the context of complex projects. The findings here shed light on the possible remedies that efficiently guide complex project organization’s resources to urgent stakeholder issues and facilitates managing stakeholder dynamics for successfully implementing external stakeholder engagement.
5.1.2 Contribution to practice research on stakeholder engagement

The findings from A2 yielded insights on the specific engagement practices over a complex project’s lifecycle. The empirical findings highlighted the essential role of the timely disengagement of external stakeholders in implementing external stakeholder engagement. While it is clear that engaging external stakeholders is crucial for creating value for stakeholders, it seems just as pivotal to timely and selectively disengage specific external stakeholders for reaching beneficial outcomes at the system-level in complex projects. Interestingly, so-called balancing practices can both engage and disengage external stakeholders and strike a balance in implementing external stakeholder engagement. The four identified empirically derived rationales suggest a temporal ordering for the schemes of reasoning to either engage or disengage external stakeholders timely. These rationales are bound to complex project lifecycle phases forming a processual description of the phenomenon.

What has been missing in stakeholder theory and research on stakeholder engagement is contextual and nuanced explanations on how and why different engagement strategies change over time (Freeman et al., 2010, p. 287). Consequently, the primary contribution of A2 is to provide novel understanding of how engagement strategies, including empirically grounded, timely practices to engage and disengage external stakeholders, change over a complex project’s lifecycle according to four rationales that justify the timely achievement of system-wide benefits (i.e., value creation to stakeholders).

The findings showed that timely disengagement of external stakeholders is essential for managing the complex project during the front-end, planning, and implementation phases. While normative and moral engagement of external stakeholders was crucial throughout the project lifecycle, it was just as crucial to timely disengage specific external stakeholders, as encapsulated in the concept of strategic engagement, to secure the project’s progress and long-term value creation. Interestingly, the project organization used both disengagement and engagement practices toward some of the same external stakeholder groups in a value-adding manner with no significant damage to the stakeholder relationships. The previous implies that instead of developing a completely closed or open system with strict or clear boundaries for decision-making, the project organization included some permeability in the system, allowing external stakeholders’ timely contribution but also accentuating timely disengagement.

The above findings resonate with the managerial thesis of stakeholder theory, which argues that all stakeholders are of equal value, but not all stakeholders could or should be equally engaged in all organizational activities (Donaldson & Preston, 1995; Phillips et al., 2003). However, earlier practice research on stakeholder engagement has focused mainly on the role of normative and moral engagement in enabling value creation to stakeholders (Freeman, 2007; Harrison & Wicks, 2013; Noland & Phillips, 2010), particularly in the context of complex projects (Eskerod et al., 2015). According to my best knowledge, not much research attention has been devoted to understanding the role of strategic engagement and particularly the interplay of strategic and moral engagement in enabling value creation to stakeholders.
Therefore, the previous findings contribute to practice research on stakeholder engagement by showing that in addition to normative and moral engagement of external stakeholders, strategic engagement (i.e., including timely disengagement of external stakeholders) is also crucial for enabling value creation to stakeholders in the long-term and for offering a balanced and pragmatic approach to stakeholder engagement in complex projects. The findings here show how the managerial thesis is put in practice in complex projects through the ‘pacing’ of engagement and disengagement practices, highlighting both moral and strategic engagement of external stakeholders. The disengagement and then re-engagement of particular stakeholder groups seems contextually essential for complex projects, and it may be that this specific feature is deteriorating for stakeholder relationships in other contexts resulting in undesired outcomes at the system level.

The above-described findings on the timely disengagement and engagement of external stakeholders also provided novel, in-depth understanding of the overall timing of external stakeholder engagement, which has been of great debate in previous practice research on stakeholder engagement in complex projects. Some research has argued for the benefits of engaging external stakeholders during the early project lifecycle phases (i.e., front-end and planning phases) (Davis, 2014, 2017; Missonier & Loufrani-Fedida, 2014) and disengaging during later lifecycle phases (Flyvbjerg et al., 2003, p.86; Lundin & Söderholm, 1995). Other studies have rooted for the benefits of disengaging external stakeholders in early lifecycle phases and engaging them during later lifecycle phases (i.e., implementation and operations phases) (Aaltonen & Kujala, 2010; Flyvbjerg, 2014). The findings here contribute to the practice research on stakeholder engagement as they shed light on the timing paradox of stakeholder engagement in complex projects. The findings show that the answer is not the dichotomy between engagement and disengagement, but the gradual, careful and simultaneous implementation of both disengagement and engagement approaches, including also balancing practices (i.e., practices to both disengage and engage external stakeholders) throughout the project lifecycle.

The findings showed how four rationales, framing the project, legitimizing governance, maintaining interaction, and expanding governance, functioned as the project organization’s reasons for timely engaging and disengaging external stakeholders over the complex project’s lifecycle. The rationales were bound to the complex project’s evolution and stakeholder interaction to achieve system-level benefits (i.e., long-term value creation to stakeholders). Essentially, the findings here show how the different theoretical reasons for engagement, found in previous literature, change over time.

The rationale framing the project demonstrated how the project organization utilized some external stakeholders as valuable and necessary inputs to proceed with early planning (as in instrumental reasoning). Concurrently, some other stakeholders were disengaged because they possessed no valuable resources (as in resource-dependency reasoning). The rationale legitimizing governance illustrated how the project organization engaged and disengaged different external stakeholders.
stakeholders to construct and maintain organizational legitimacy and reputation. In so doing, the project organization sought to establish its legitimate position as the governor of the complex project (as in institutional reasoning). The rationale maintaining interaction showed how the project organization began engaging external stakeholders through the engagement platforms to specific issues and co-create a shared understanding of the project and its benefits for stakeholders (as in identity-based reasoning). However, as some specific issues were not addressed with external stakeholders to secure the complex project's timely progression, the rationale also illustrated the instrumental reasoning. The rationale of expanding governance demonstrated how the project organization saw external stakeholders as enablers and proponents of joint value creation and began engaging external stakeholders genuinely on an extended level, offering possibilities to truly affect the complex project (as in value creation reasoning).

Existing practice research on stakeholder engagement has shed light on the different theoretical reasons for stakeholder engagement, including instrumental (Mitchell et al., 1997), resource-dependency (Frooman, 1999), identity-based (Scott & Lane, 2000), institutional (Orr & Scott, 2008) and value creation reasoning (Eskerod & Ang, 2017). These reasons in literature are rather general and static explanations, neglecting issues of contextuality, temporality, and how the different reasons are realized in practice and combined over time. Consequently, the findings concerning the rationales contribute to practice research on stakeholder engagement by elaborating the theoretical reasons for engagement and disengagement in the context of complex projects as they show how the distinct reasons for engagement change and are combined over time. The identified four rationales offer a processual understanding of the reasons behind disengagement and engagement of external stakeholders over project lifecycle that can be considered valuable for enlightening a nuanced understanding of the timely reasoning for dynamic stakeholder engagement in complex projects.

5.1.3 Contribution to communication research on stakeholder engagement

The findings from A3 showed that the effectiveness of implementing external stakeholder engagement in complex projects depends on the cautious understanding of the target stakeholder group, suitable discussion topics, and modes of communication. Specifically, within the context of social media, a project organization’s communication offering information about sustainability issues, or communication that is cooperative or entertaining, effectively engages external stakeholders. These kinds of communication attracted multiple reactions, comments, and shares from the social media community, achieving the breadth of engagement. On the contrary, interactive communication that offers dialogues and opportunities for influencing the project was ineffective in engaging external stakeholders. These kinds of communication did not attract multiple reactions, comments, and shares from the community, failing to achieve the breadth of engagement.
Empirical studies on stakeholder communication effectiveness are very limited in stakeholder theory and research since most studies focus on other issues of stakeholder communication, also being often theoretical and conceptual (cf. Freeman et al., 2017; Kujala & Sachs, 2019). Therefore, A3 contributes to communication research on stakeholder engagement by providing valuable insights into how effective communication may take place in the context of complex projects and social media regarding external stakeholders. This dissertation is one of the first to examine empirically the effectiveness of external stakeholder communication in complex projects and social media contexts (cf. Ninan et al., 2019a; Turkulainen et al., 2015; Williams et al., 2015; Zhang et al., 2018), paving the way for subsequent stakeholder and social sustainability research in the context of complex projects. The research offers a valuable foundation for assessing the performance implications of stakeholder engagement in future stakeholder theory and research, particularly in complex projects.

Concerning informational content, the findings demonstrated that communication about economic and social issues with a focus on the project’s positive impacts increased the external stakeholders’ (social media community members’) engagement level (measured as Facebook comments, reactions, and shares). The findings conform with earlier evidence that external stakeholders anticipate transparent information on complex projects’ economic and social impacts (Di Maddaloni & Davis, 2017; Vuorinen & Martinsuo, 2019). However, culturally embedded conceptions of Facebook as a formal and positive corporate communication medium may also influence external stakeholders’ expectations, reactions, and perceptions (Ninan et al., 2019a). The social media community members are a self-selected group who might tend to react to positive social media information, as supporting issues and themes on organizational Facebook pages is likely to be more legitimate behavior than criticizing.

The findings did not support that information about environmental issues would increase external stakeholders’ engagement level. This kind of information was mostly ‘negative’, including communication about emissions, noise, traffic interruptions, and the project’s other disturbances, which may explain why the social media community reacted more neutrally and passively. Controversially to previous research, transparent information about harmful or challenging project issues did not increase the engagement level, which might have been anticipated due to the potentially negative impacts on external stakeholders (Di Maddaloni & Davis, 2018; Maylor & Turner, 2017).

The above observation related to the ineffectiveness of information about environmental issues may be explained by the project’s implementation phase, where external stakeholders often consider that their ability to influence environmental issues is lower compared to, e.g., the planning phase, where issues are yet open for decisions (Aaltonen & Kujala, 2010). It was also true that Tunnel project’s environmental issues were not particularly controversial, being rare for complex projects (Flyvbjerg, 2014). The previous may mean that the social media community members did not have an urgent need to react and comment on information about environmental issues. External stakeholders may also think that more controversial and complex issues are handled through
other communication media (e.g., face-to-face meetings, workshops). In case the environmental issues had been controversial, the social media community members could have reacted more strongly and reinforced their collective identity as the potential opponents of the project (Aaltonen & Kujala, 2016; Rowley & Moldoveanu, 2003).

Regarding entertaining content, the findings demonstrated that humor, audiovisual content, and messages containing links increased external stakeholders’ engagement level. These findings support existing research regarding 3D visualizations, illustrations, videos, and other graphical material used for engaging external stakeholders (Alin et al., 2013; Hietajärvi & Aaltonen, 2018; Turkulainen et al., 2015). In Tunnel project, the project organization utilized different kinds of visualizations of the project implementation in their social media communication. Occasionally, the project organization relied on humor, which also received multiple comments, reactions, and shares from the social media community members.

The findings from A3 also yielded insights on the ineffectiveness of implementing external stakeholder engagement in complex projects. In the context of social media, this meant that the project organization’s communication providing relational or remunerative content was ineffective in engaging external stakeholders. The findings related to the ineffectiveness of relational and remunerative content reflect the identified challenges of mobilizing external stakeholders to value co-creation processes, including democratic and open dialogues (Vinnari & Dillard, 2016).

Relational content consisted of communication that stimulated interaction with or within the social media community and provided general support and help, culminating in the concept of stakeholder dialogue. The findings related to the ineffectiveness of relational content question the dialogic exchange potential of social media (particularly Facebook) for external stakeholder engagement in complex projects and contribute to communication research on stakeholder engagement by contradicting previous claims concerning the strengths of stakeholder dialogue in effective stakeholder engagement (Bebbington et al., 2007; Freeman et al., 2017, pp. 7-8; Kujala & Sachs, 2019; Vinnari & Dillard, 2016).

The following are possible explanations for the above findings related to the ineffectiveness of relational content. It may have been that the social media community members did not perceive Facebook as an authentic channel for dialogue and interaction, and they favored more passive behavior in the form of consensus-building (Passetti et al., 2019). Also, orientation can be a pivotal factor in constructing interaction and dialogue. Earlier research has argued that interaction needs to be open and oriented to provide external stakeholders with opportunities to advance their ideas, visions, social needs, and values, and this orientation must be signaled in the organization’s rhetoric and language for it to be effective (Brown, 2009; Kaptein & Van Tulder, 2003). Nevertheless, the open orientation may be a risk for the project organization because it might trigger undesirable stakeholder demands, challenging the control over the commu-
In Tunnel project, the project organization practiced its role as an expert that facilitated the interaction. The project organization opened specific issues for discussion, replied selectively to external stakeholders’ messages, and, overall, critically managed the communication and interaction. Hence, instead of providing opportunities for authentic and open dialogue, the project organization was more of a monologist and expert, manifesting organizations’ traditional communication role in existing research (Passetti et al., 2019).

Remunerative content meant communication that provided opportunities to influence the project implementation or outcomes (i.e., votes, contests, feedback requests). Opposite to UGT, remunerative content significantly decreased external stakeholders’ engagement level. The previous may be explained by external stakeholders’ belief that their ability to influence decision-making was minuscule and related to minor issues during the project implementation phase (Aaltonen & Kujala, 2010; Mitchell et al., 1997). Although Facebook was the primary communication channel, it may be that external stakeholders did not experience Facebook as the primary channel for influencing and favored other channels. Also, social media community members may have felt that specific pre-determined decision-making themes are mechanisms that reflect the project organization’s dominant business interest and that the project organization seeks to achieve control with such mechanisms (Spence & Rinaldi, 2014). The social media community may have experienced that their needs, solutions, and problems were considered only marginally since the agenda was set by the project organization, which relates to the earlier point about the project organization’s role as a monologist and expert (Passetti et al., 2019). Besides, the project organization was likely in a better position to influence what is considered legitimate and appropriate, which relates to the issue of power dynamics and politics in stakeholder interaction (Chow & Leiringer, 2020; Mitchell et al., 1997). Lastly, remunerative content requires that the social media community members invest intellectual input, time, and possibly other resources. Since doing so requires commitment and a deeper engagement level (Frooman, 1999), it is possible that external stakeholders favored lighter forms of interaction in social media.

As a final worthwhile observation, it may be the case that instead of engaging effectively multiple members of the social media community and achieving the breadth of engagement, relational and remunerative content types engaged only a few members but in a more profound way, achieving the depth of engagement. However, this cannot be verified from the current analysis because a different measurement model (and theoretical assumptions about the phenomenon) would be required to confirm or reject this speculation.

5.2 Contribution to complex project management research

Although the primary contributions of this dissertation relate to stakeholder theory and research, the empirical findings may also be interesting from the
Discussion

perspective of advancing project management research, especially in the research context of complex projects. The following two subsections discuss the research findings in light of two relevant streams of complex project management research to examine whether and how the new knowledge of this dissertation could potentially advance complex project management thinking. However, it is worth noting that the original empirical research was not approached from these alternative theoretical perspectives. Thus, the following discussion and claims need to be assessed cautiously and considered more as potential new ideas on how to advance understanding in these areas.

5.2.1 Contribution to complexity research of complex projects

The empirical findings of A1 may provide new understanding of the potential remedies for managing structural, emergent, and socio-political complexities of complex projects. Since the identified organizing solutions were focused on addressing external stakeholder engagement, insights can be interpreted to address the relevant complexity issues of implementing external stakeholder engagement (discussed in subsection 2.1 and summarized in Table 3). These kinds of insights bring the research findings related to stakeholder theory and the academic discourse around the research context closer together. Stakeholder theory has engaged in dialogues with other disciplines and theories as it has been influenced by concepts and ideas of other disciplines that form the area of how businesses operate in particular contexts (Wicks et al., 2019). Stakeholder theory has also impacted other disciplines significantly as many disciplines and theories have adopted concepts and ideas from stakeholder theory (Wicks et al., 2019). For instance, stakeholder theory has greatly influenced the development of project management discipline over several decades (Littau et al., 2010). Due to the above-described dialogic nature of stakeholder theory, it is reasonable to contemplate how the research findings could offer potential new ideas to research regarding the empirical context.

Previous research on the complexities of complex projects has been primarily focused on understanding the complexity dimensions and how they influence the organizing and organizations of complex projects (Geraldi et al., 2011; Geraldi & Adlbrecht, 2007; Jaafari, 2003; Maylor et al., 2008; Whitty & Maylor, 2009; Williams, 1999). Although some research has addressed the management of the complexities and developed some general managerial frameworks (Maylor & Turner, 2017; Maylor et al., 2013), empirical research on the management of complexities is still nascent, and many details of the possible remedies have yet remained unexplored.

The governance-based solutions demonstrate how a project organization uses formal project management structures and processes in response to the structural complexity of a complex project. The formal organizational structures included breaking down the organization into required inter-organizational roles to coordinate activities and tasks among the different project actors, reducing the structural complexity associated with the organization and organizing of external stakeholder engagement as high-paced coordination among multiple actors became manageable. The engagement activities resulted from a work
breakdown structure that divided the process of external stakeholder engagement into clear, executable tasks, which facilitated reducing the structural complexity of the process. The two above breakdown structures support previous notions concerning the ‘bottom-up’ project management approaches used in complex projects with relatively well-defined goals and management methods (Turner & Cochrane, 1993). The engagement indicators provided relevant and timely feedback that supported adjusting the engagement activities and organizational structures continuously, further reducing the structural complexity of the process and organization. The engagement indicators resonate with ‘soft methods’ used in complex projects that focus on iterative learning and exploration for tailoring suitable management approaches (Crawford & Pollack, 2004).

Overall, the governance-based solutions complement previous research highlighting the role of formal project management processes and structures in managing structural complexity (Williams, 1999). For instance, previous findings suggest that organizational and work breakdown structures are useful for dealing with structural complexity of the process and organization (Maylor & Turner, 2017). However, existing research has not provided much understanding of how the formal project management processes and structures address structural complexity. Consequently, these findings contribute to complexity research of complex projects by elaborating and extending understanding of the role of formal project management structures and processes in managing structural complexity.

The value-based solutions show how a project organization uses relational practices and relationship building in response to a complex project’s socio-political complexity. The case project organizations developed and established engagement values that were concrete means of aligning the multiple actors’ different interests and goals related to external stakeholder engagement. The joint goal development relates to previous notions on the process of ‘self-organizing’ in complex projects, where goals are not always pre-defined through a rational selection process but negotiated and accomplished within a dynamic and vivid interaction process (Cicmil & Marshall, 2005). The shared values were constantly maintained through leading by example and joint practices that supported internalizing the community spirit. These practices resonate with people-oriented management approaches used especially in exploratory and innovative complex projects. The purpose of people-oriented management approaches is to build a safe environment and sense of community that are required for developing the common goals and objectives of the project or task at hand (Rekonen & Björklund, 2016). The development of values also implied that the project actors would react more similarly to external stakeholders’ requirements as their own priorities and objectives were more unified.

All in all, the value-based solutions are in line with previous research emphasizing the role of relational practices over formal processes in reducing socio-political complexities (Maylor et al., 2013). Existing research has argued that approaches that seek to develop relationships within the project organization support reducing socio-political complexity (Maylor & Turner, 2017). However, detailed understanding of such approaches and how they reduce socio-political complexities...
complexity is more limited. Hence, the findings here contribute to complexity research of complex projects by elaborating the role of relational practices in managing socio-political complexity. The findings related to value-based solutions complement existing knowledge by providing concrete evidence of the approaches to building relationships within the project organization and how they help reduce the project organization’s socio-political complexity.

The dynamism-based solutions illustrate how a project organization relies on flexibility in response to a complex project’s emergent complexity, supporting existing research regarding the role of flexibility in managing emergent complexity of complex projects (Jaafari, 2003). The flexible roles and timely focus on relevant activities ensured appropriate and rapid responses to external stakeholders’ changing concerns and resistance as they increased case project organizations’ resilience when encountering uncertainty caused by unanticipated stakeholder incidents. The practices supported identifying relevant external stakeholders, their key attributes, and dealing with the complex project’s dynamic organizational boundaries in a timely manner. The above findings resonate with previous notions on the role of agility (the ability to create and respond to change) (Maylor et al., 2008) and agile project management (Whitty & Maylor, 2009) in managing emergent complexities of complex projects. The dynamism-based solutions offer understanding of the flexibility practices that efficiently direct complex project organization’s resources to pressing stakeholder issues and thus facilitates managing emergent complexity.

Altogether, the above findings support existing evidence regarding the role of flexibility in managing the emergent complexity of complex projects (Maylor et al., 2013). For instance, previous research has similarly noted the role of agile project management practices, flexibility in project activities and decision-making next to formal management processes, and even entrepreneurial actions in reducing emergent complexities (Maylor & Turner, 2017). While previous research has noted the role of flexibility in reducing emergent complexities, understanding how flexibility contributes to reducing emergent complexities appears to be more limited. Therefore, the findings here contribute to complexity research of complex projects by elaborating the role of flexibility in managing emergent complexity. The findings related to dynamism-based solutions complement existing understanding by providing evidence of how flexibility in project activities and decision-making facilitate reducing emergent complexities efficiently as these solutions guide complex project organization’s resources to urgent stakeholder issues.

5.2.2 Contribution to research on project networks

The findings from A2 may offer new understanding of project organizations’ governance practices used to manage complex projects’ project networks.

In general, research on networks is a fundamentally different research stream with its own assumptions and theories. Although justifying the following point thoroughly is beyond the scope of this dissertation, research on networks is still closely related to research on stakeholders, and in fact, the two research streams exchange and adapt ideas from each other continuously (for several examples,
see, e.g., Freeman et al., 2010, pp. 83, 109 & 180; Frooman, 2010; Lindfelt & Törnroos, 2006; Rowley, 1997; Schneider & Sachs, 2017). In essence, both research streams deal with similar issues and phenomena related to how and why networks of actors (or stakeholders) interact in different contexts. As such, it is reasonable to contemplate whether and how the findings of this dissertation may be interpreted into potential new ideas to research on project networks.

The project organization in A2 can be interpreted as a lead organization that governed the project network. Whether any single organization can manage a network is a controversial topic and debated among researchers (compare, e.g., Jarillo, 1988; Ritter et al., 2004). However, a widely accepted notion is that while a single actor cannot act as a legitimate authority for the network as a whole (DeFillippi & Sydow, 2016), a network may be governed by a lead organization (also called a hub firm) that influences the network (Möller & Rajala, 2007; Nambisan & Sawhney, 2011). A useful way to approach how a lead organization influences a project network is to look at how the lead organization influences the three commonly recognized dimensions of networks, cognitive, structural and relational, that help explain the value creation of networks (Nahapiet & Ghoshal, 1998).

The cognitive dimension is concerned with actors’ understanding of the network, and, e.g., its goals and objectives that help determine actors’ willingness to participate in the network (Tsai & Ghoshal, 1998). In turn, the structural dimension is concerned with the network pattern, including, e.g., network centrality, density, and actor connectivity that determine the power-relations (hierarchy) among actors in the network (Tichy et al., 1979). Lastly, the relational dimension is concerned with the quality of relationships in the network, meaning, e.g., the level of trust (tie strength) between different actors that are essential enablers for joint activities among the network actors (Nahapiet & Ghoshal, 1998).

It can be interpreted that the case project organization in A2 utilized the nine engagement and disengagement practices to influence the project network’s cognitive, structural, and relational dimensions. The rationale for using the nine practices was based on the underlying value creation logic of the complex project that can be defined through the identified four rationales, framing the project, legitimizing governance, maintaining interaction, and expanding governance, that justified and determined value creation to the network actors. The previous observation resonates with earlier research suggesting that the management of networks is dependent on their underlying value creation logic (Möller & Rajala, 2007). In the following, I will discuss how the project organization utilized the different practices to influence the three network dimensions.

The practices, reference planning tool, engagement platforms, champions, and theses for development, were key activities to manage the project network by influencing its cognitive dimension. In practice, these activities were used to manage and control the network actors’ expectations and contributions in co-developing the network’s main goals during all lifecycle phases. The previous reflects existing research on the role of network architect (lead organization) who mobilizes other network actors to collective goal formation (Matinheikki et
The reference planning tool was used in the early lifecycle phases to provide other network actors with ostensible roles to contribute to developing the network’s goals. Other network actors’ contributions were controlled rather strictly to support the project organization’s purposes and goals primarily. During the mid-lifecycle phases, the other network actors were given more relevant contributor roles. The engagement platforms were a means to let other network actors contribute more properly in developing the network’s objectives, and the champions arbitrated the network actors’ different interests, goals, and expectations to form a shared understanding of the key goals of the network. The theses were then an explicit means of finalizing the shared understanding of the project network’s essential objectives during the later lifecycle phases.

The above findings support the view that network management is not only an authoritarian process (although a lead organization likely orchestrates the process), but a collective action process where network actors, who do not have direct business relationships, jointly construct a system-level goal for the network (Gulati et al., 2012). However, as Gulati and colleagues (2012) suggested, the system-level goal still heavily corresponded to the lead organization’s goals (project organization), which can be reflected, e.g., in the ostensible contributor roles of the other network actors during the early lifecycle phases. It can be identified that the network actors were more willing to participate in the network activities towards the later lifecycle phases as they were given more pertinent contributor roles. The previous resonates with earlier research findings suggesting that a greater opportunity to affect the network increases the actors’ willingness and motivation to participate in and contribute to the network (Wasko & Faraj, 2005).

The practices, joint decision-making organization, master planning tool, and neglecting queries were activities to manage the project network by influencing its structural properties, especially in the early and mid-lifecycle phases. The established decision-making organization helped draw clear organizational boundaries between the network actors (defining internal and external stakeholders) and creating a dense inner network among the internal stakeholders (the project organization). Setting such organizational boundaries supported coordination and collaboration among the internal stakeholders to create initial conceptualizations of the project network and its pertinent goals. The previous solidifies earlier research regarding the benefits of dense networks (Coleman, 1988; Doz et al., 2000).

However, the decision-making organization was also used to create new ties to more distant network actors (by engaging authority-related external stakeholders that acted as gatekeepers) to grow the network steadily. It seems that while the emerging network was highly centralized and dense at the inner network (project organization), the network at large was sparse as many actors were not yet connected to each other. A very similar empirical finding regarding the structural dimension was found by Matinheikki and colleagues (2016) in their case study. The project organization created the new connections to distant actors to negotiate and gain acceptance to developing the project network be-
caused the distant actors were relevant for decision-making processes and possessed necessary information, but they were not yet connected. These relationships with distant actors resonate with the benefits of weak ties (Granovetter, 1973, 1983) as the project organization had access to new, relevant information for developing the network.

Disengaging certain network actors through master planning and neglecting queries were efficient means of centralizing the decision-making rights to the project organization and assigning a leader role for developing the network. This finding is in line with previous research that has highlighted the essential role of a lead organization in governing a network (Provan & Kenis, 2008), and especially during the early lifecycle phases of a project network to provide a direction for the emerging network (Matinheikki et al., 2016). The project organization can be characterized as a commander (Rowley, 1997) who exerted its decision-making power to influence the network during the early lifecycle phases. The previous observation is consistent with existing research because compromiser is a typical leader role in a network with low density and high centrality (Rowley, 1997). As the network’s density increased during the mid-lifecycle phases, the project organization shifted to a compromiser role where it began listening to and negotiating with other network actors as suggested in previous research (Rowley, 1997).

The practices, reference planning tool, engagement platforms, negotiations, and systematic feedback were central activities used in all lifecycle phases to manage the network by influencing its relational dimension. Reference planning tool and engagement platforms were often used to collaborate and thus develop relationships with new and existing network actors during the early and mid-lifecycle phases. In turn, negotiations and systematic feedback showed that a more in-depth and frequent interaction could facilitate trust development during the later lifecycle phases. These activities offered other network actors real contribution opportunities to decision-making, signaling trust and clearly demonstrating the value of these relationships.

The previous resonates with earlier notions regarding the development of relationships and trust (Kale et al., 2000). That is, reference planning tool and engagement platforms contributed to developing relationships (increased tie strength between actors) through lighter forms of interactions while developing trust demanded a more in-depth approach as was the case in negotiations and systematic feedback that included joint problem-solving and shared decision-making (cf. Dekker, 2004). It is also worth noting that the joint decision-making organization (TAD) contributed to the relational dimension, as frequent, in-depth interactions facilitated developing relationships and even trust among the internal stakeholders during the early lifecycle phases. The previous aligns with earlier research on the role of joint boards and decision-making as mechanisms to develop trust and coordinate activities among partners (Kale et al., 2000; Saxton, 1997).

The nine practices used to influence the network dimensions and thus manage the network complement recent research on project networks. Previous research has provided similar evidence and understanding of the use of different
network management activities in early (Matinheikki et al., 2016), mid (Laursen, 2018), and late lifecycle phases (Artto et al., 2016), altogether describing how project network management can facilitate value creation. However, according to my best knowledge, no studies have explicated how the use of such network management activities changes over time. It appears that understanding of the timing of the network management activities has been more limited, which can be considered a salient feature of governing a project network. Consequently, the above-described findings contribute to research on project networks by elaborating the previous understanding of network management activities. The findings shed light on the timing of network management activities by showing when different types of activities are utilized and how they influence the three dimensions of networks over the project lifecycle facilitating value creation.

The findings related to the three dimensions highlight that both formal and relational governance mechanisms were required in governing the project network. While formal governance mechanisms included the practices related to influencing the project network’s structural dimension, the relational mechanisms comprised of the practices related to influencing the relational and cognitive dimensions. Practices related to influencing structural dimension are more formal governance mechanisms because they defined clear organizational boundaries (e.g., based on contracts) and were overall associated with more rigid approaches (DeFillippi & Sydow, 2016). In turn, practices related to influencing relational and cognitive dimensions are related to relational approaches because they focus on actor relationship characteristics (Bakker et al., 2011). The previous supports existing research showing that both relational and formal governance mechanisms are relevant in managing project networks (DeFillippi, 2015). The relational mechanisms were used with a lower intensity during the early lifecycle phases, and their use intensified towards the back end of the lifecycle. In turn, the formal governance mechanisms were used intensively initially, and their use diminished gradually towards the later lifecycle phases.

The above suggests that relational and formal governance mechanisms had a nonlinear relationship (both complementary and substitutive) as Dekker (2004) contemplated. The project organization exerted formal mechanisms in the network until a sufficient level of control was achieved in the mid-lifecycle phases to safeguard the project’s development and then focused on utilizing relational approaches. However, some relational mechanisms were used in parallel during the early lifecycle phases, implying that the two types of mechanisms had a complementary relationship at that time. Nevertheless, after the mid-lifecycle phases, the relational mechanisms appeared to substitute the more formal governance mechanisms in the network’s management. The previous relates to nurturing trust in networks where trust-based actions signal a reciprocal commitment to the complex project, being a necessary basis for making difficult or otherwise significant decisions when facing unexpected events and incidents that could not be foreseen in the project contracting phase (DeFillippi & Sydow, 2016; Swärd, 2016).
The above observation of a nonlinear relationship partly contradicts previous research arguing for a complementary relationship where formal governance mechanisms might be more effective when used in moderation and complemented by relational governance mechanisms (DeFillippi & Sydow, 2016; Lewis & Roehrich, 2009; Roehrich & Lewis, 2014; Zheng et al., 2008). Although, Zheng and colleagues (2008) noticed that the relationship is likely a dynamic interplay that does not follow consistent patterns (e.g., from low contractual to high or vice versa, or from low relational to high or vice versa), offering an early indication of a potential nonlinear relationship between the two types of governance mechanisms. Nevertheless, the above findings contribute to research on project networks by clarifying the relationship between formal and relational governance mechanisms in governing project networks. The findings expand previous understanding of a complementary relationship by showing that the formal and relational governance mechanisms may have a nonlinear relationship over the project lifecycle where they first have a complementary relationship that gradually changes to substitutive (relational mechanisms substitute the formal mechanisms).

5.3 Contribution to applied theories

Following the theory elaborating and theory testing case research (Ketokivi & Choi, 2014), this dissertation makes minor contributions to the applied theories in A1 and A3.

5.3.1 Contribution to theory of organizing as a problem-solving process

The findings of A1 provide new contextual insights regarding the applied theory of organizing as a problem-solving process to four universal challenges. The analysis found three organizing solutions; governance-, value- and dynamism-based solutions that offer novel empirically grounded understanding of the organizing activities and arrangements in the context of complex projects regarding the task of external stakeholder engagement. According to my best knowledge, the theory has not been applied and elaborated in the context of complex projects, particularly regarding the task of external stakeholder engagement, and understanding of the relevant organizing solutions in this context is lacking. Therefore, following the logic of theory elaboration (Ketokivi & Choi, 2014), this dissertation contributes to the theory of organizing as a problem-solving process to four universal challenges (Puranam et al., 2014). The research elaborates the theory in the context of complex projects regarding external stakeholder engagement. The findings add new, contextual understanding and empirical grounding regarding how the four universal challenges are solved in complex projects related to the task of external stakeholder engagement. The findings shed light on the pivotal organizing decisions, activities, and arrangements that are made so that external stakeholder engagement is organized successfully in complex projects.
5.3.2 Contribution to UGT

The findings of A3 offer novel, contextual understanding and empirical evidence concerning UGT. The empirical analysis showed that informational and entertaining media contents effectively satisfied the social media community members’ needs during Tunnel project’s implementation phase (i.e., increased their engagement level measured as Facebook comments, reactions, and shares). The previous finding complements UGT (Dolan et al., 2016). However, according to my best knowledge, UGT has not been applied and tested in the context of complex projects, particularly regarding external stakeholders and the phenomenon of stakeholder engagement. Therefore, in light of the theory testing case research (Ketokivi & Choi, 2014), this finding contributes to UGT by offering new, contextual evidence and support that entertaining and informational media content satisfy external stakeholders’ needs within complex projects and social media setting (Facebook).

A3 also showed that relational and remunerative media contents were ineffective in satisfying the social media community members’ needs during Tunnel project’s implementation phase (i.e., remunerative content decreased Facebook reactions, comments, and shares, and relational content had no statistical effect). The finding conflicts with earlier claims in UGT about the effectiveness of remunerative and relational media content (Dolan et al., 2019; Osokin, 2019). Consequently, in light of the theory testing case research (Ketokivi & Choi, 2014), this finding contributes to UGT by providing novel, contradicting evidence and understanding that relational and remunerative media content may not satisfy external stakeholders’ needs within the context of complex projects and social media (Facebook).
6. Concluding remarks

This section concludes the dissertation by first translating the findings into managerial implications (subsection 6.1), then addressing the research limitations (subsection 6.2), and finally offering ideas for future research (subsection 6.3).

6.1 Managerial implications

The findings of this dissertation provide managers of complex projects practical guidance on how to implement external stakeholder engagement. The synthesis illustrates that external stakeholder engagement can be planned and implemented systematically through three perspectives, organizing, practice, and communication, that altogether increase the chances of successfully engaging external stakeholders. The organizing perspective provides advice on setting up a complex project organization with the necessary know-how to engage external stakeholders. The practice perspective offers guidance on how to interact with external stakeholders timely over a complex project’s lifecycle. The communication perspective provides more granular directions on communicating with and to external stakeholder groups in different instances (i.e., within different engagement practices). The findings from each of these perspectives are translated into practical guidance below. The practical guidance is targeted at any mid or top manager of a complex project, regardless of their parent organization.

**How to build a project organization?** The managers of complex projects should consider three pivotal organizing structures regarding external stakeholder engagement when forming the inter-organizational project organization during the early lifecycle phases. These are governance, mental and dynamic structures. The three structures might also be useful beyond organizing external stakeholder engagement, contributing more generally to complex project management.

The governance structures highlight the need to establish inter-organizational working groups (e.g., “stakeholder engagement teams”) with dedicated, specialized roles for external stakeholder engagement. The members of such working groups should come from different project organization parties, e.g., from contractor, owner, and client sides. The working group is required to devise and
develop practices for engaging different external stakeholder groups. The practices should range from mere information distribution (flyers, website articles) through seminars (information seminars, Q&A sessions) to collaborative workshops (workshops with external stakeholders) for achieving both the breadth and depth of engagement. The managers should also set up indicators for measuring engagement performance, such as positive publicity, external feedback systems, or other appropriate metrics. The working group follows the indicators to learn and understand how different engagement practices influence stakeholder relationships. The indicators thus help to adjust the subsequent practices accordingly.

The mental structures emphasize that managers need to foster community spirit within the project organization that promotes trust and transparency with external stakeholders. Managers can achieve this by leading by example and by utilizing so-called internalizing practices. Internalizing practices include, for example, orientation and training dedicated to imprint the value of stakeholder engagement, small group working in co-locational working spaces to create a desired community spirit, and contractually establishing a best-for-the-project principle where everyone works toward the project goal shared by all stakeholders. These practices support creating relevant organizational values that acknowledge stakeholder engagement as a valuable part of the project operations. When project organization’s personnel assimilate such organizational values, they learn to respect external stakeholders and consider external stakeholder engagement as a natural, inherent, and transparent practice, being a central part of the project’s success.

The dynamic structures highlight the relevance of flexibility and timeliness. While it was essential to establish a dedicated working group for stakeholder engagement with specialized roles and personnel for engaging external stakeholders as the primary point of contact, it is also essential that all project personnel are relatively autonomous and flexible regarding external stakeholder engagement. Any individual within the project organization needs to have the ability (i.e., sufficient decision-making rights) to react to external stakeholders’ concerns if necessary. The previous is especially relevant in urgent situations where external stakeholders may contact someone other than a member of the “stakeholder engagement team”. The flexible roles support dealing with these urgent stakeholder issues promptly, contributing to successful stakeholder engagement. Complex project managers also need to set up communication systems (e.g., external feedback systems, internal ICT) that facilitate the timely execution of external stakeholder engagement. These systems guarantee that personnel can access requisite information for reacting and addressing external stakeholders’ concerns timely. Dynamic structures ensure a timely approach to implementing external stakeholder engagement.

**How to interact with external stakeholders?** After the project organization has been established with necessary structures for external stakeholder engagement, the next relevant managerial issue concerns the continuous interaction with external stakeholders over the project lifecycle. That is, which external stakeholder groups to engage, when, and how.
The findings of this dissertation suggest that complex project managers ought to focus on system-level value creation instead of optimizing the project organization’s short-term cost, schedule, and scope dimensions. Managers should adopt a balanced and flexible approach where practices change from disengagement to engagement cyclicly. The previous can be achieved by relying on feedback and learning to identify which stakeholders’ engagement and inputs are required for timely value creation and which are not. Importantly, managers can utilize both disengagement and engagement practices towards some of the same external stakeholder groups in a value-adding manner over time. The logic follows that by engaging, disengaging, and then re-engaging some specific stakeholders, the project organization creates urgency, motivating these stakeholders to mobilize themselves for vivid interaction that further facilitates solving essential value creation issues. The previous observation is an essential lesson for complex project managers because earlier practical advice is often dichotomous, typically suggesting either an inclusive engagement of external stakeholders or a consistent disengagement of external stakeholders for sustained value creation over the lifecycle.

The case evidence showed that engagement and disengagement practices are bound to the complex project’s lifecycle. During the early lifecycle phases (so-called pre-planning or front-end phase), managers should focus on framing the project, i.e., developing the common project goal and concept with key external stakeholder groups like authorities to proceed with the project. The project framing can occur through, e.g., a collaborative decision-making organization to which the project organization includes the necessary external stakeholders. The previous means that many external stakeholder groups should be disengaged simultaneously to manage the evolving stakeholder network. When the project concept starts to emerge, managers need to gradually grow the organizational boundaries by engaging external stakeholders and including their ideas in the planning. The above helps frame the project and its benefits toward external stakeholders, contributing to the long-term value creation.

When the complex project proceeds to its formal planning phase, managers should focus on legitimizing the governance. In this phase, managers need to disengage most of the external stakeholder groups and turn down their inputs from the planning, but managers need to continuously disclose a lot of information to keep them informed and as dormant as possible. Alternatively, these external stakeholder groups can be provided with symbolic contributor roles, meaning that their inputs to develop the project are welcomed but subtly and strictly controlled so that they primarily support the project organization’s purposes and goals. However, the alternative option comes with a risk. If external stakeholders recognize that they only have ostensible roles, the planning might escalate into a conflict having detrimental impacts. Concurrently, some key external stakeholder groups (e.g., relevant authorities) should be selectively and timely engaged in the planning by giving them opportunities to provide the feedback required to proceed with the planning. The concurrent engagement and disengagement signal external stakeholders that the project organization is the
key architect of the project but that they and their inputs are still needed for the long-term value creation.

When approaching the late planning and early implementation phases, managers should focus on maintaining vivid interaction with external stakeholders. Here, many stakeholder groups need to be engaged through, e.g., meetings, workshops, and other platforms to collaborate with them and provide them opportunities to influence some specific, pre-determined issues of the project. Still, timely disengagement of external stakeholders needs to be done to show that some urgent and essential decisions and activities are taken care of by the project organization. In this phase, balancing practices should be used in parallel to strike a balance between engagement and disengagement. For instance, champions (prestigious and credible personnel, respected by external stakeholders) who are capable of arbitrating different stakeholders’ interests and goals in workshops can help achieve such a balance. The vivid interaction signals external stakeholders that their participation is required and that they can positively impact the project’s value creation in the long-term.

During the implementation and operation phases, managers should focus on external stakeholders’ broad engagement and expand the project governance. During these phases, all significant issues and decisions have already been resolved, and external stakeholders can be engaged on an extended level to provide them with decision-making opportunities regarding medium and minor issues. Practices such as direct negotiations, direct feedback requests, and joint development guidelines designed with external stakeholders are good examples of appropriate engagement practices. These practices demonstrate to external stakeholders that their interests and goals matter for the project in the long-term, offering means to secure joint value creation.

**How to communicate to and with external stakeholders?** The last relevant issue for complex project managers is to consider what kinds of communication are required within the engagement practices to guarantee that they effectively engage the target stakeholder group. The findings of this dissertation are specific to social media and project implementation phase, but they still provide some ideas for a general guideline that complex project managers may find useful.

The findings demonstrated that understanding the target stakeholder group, suitable conversation topics, and modes of communication is pivotal to ensuring an engagement practice’s effectiveness in engaging the target stakeholder group. When looking at social media, and Facebook in particular, as an engagement practice, this means that managers should plan the communication toward the social media community around two issues, sustainability information and entertainment, using a positive, inclusive and helpful tone.

Regarding sustainability information, managers are required to disseminate information about sustainability issues frequently and transparently. Particularly, messages that include information on the social and economic dimensions (e.g., the project budget and schedule, and social impacts) attract more reactions, comments, and shares from the social media community. Messages that include information on environmental issues may or may not be effective, and
the effectiveness is likely to depend on the level of controversy generated by the environmental issues in the given context. If environmental issues are highly controversial, information about environmental issues may need to be communicated with caution. However, employing a transparent mode of communication is advisable regarding controversial issues to encourage appropriate engagement.

Regarding entertaining content, managers need to include visualizations, links, and humor as part of their communication. Videos and images of ongoing implementation work such as completed sub-systems, presenting a particular technical solution at a detailed level, or including aerial views and drone footage of the construction site, can effectively engage the social media community members because these increase their social media reactions, comments, and shares. Also, managers should include hyperlinks to informational and entertaining sources like project homepages or YouTube videos relating to the project. Lastly, managers should utilize humor as part of the communication, possibly supported with emoji and emoticons, to effectively engage social media community members.

The above two content types should be communicated using a positive tone. Any queries from the social media community related to these topics should be addressed with a helpful and friendly approach. All in all, communication should be inclusive to advance the engagement of many social media community members. In so doing, the sustainability information and entertaining content succeed in achieving the breadth of engagement.

Conversely, complex project managers should not plan the communication around remunerative or relational content because these content types may fail to attract many comments, reactions, or shares from the social media community and achieve the breadth of engagement. Remunerative content includes messages that offer social media community members opportunities to influence project implementation through, e.g., competitions and online votes related to, e.g., infrastructure art. In turn, relational content includes messages that stimulate interaction with and within the social media community. For instance, messages that provide discussion topics or pose questions to the community related to topical issues.

Relational and remunerative content is likely to be effective in other engagement practices, such as in meetings, seminars, and workshops, because it may well be that external stakeholders do not experience Facebook as the primary channel for influencing the project and favor other, more traditional channels instead. It is also possible that since the project organization is in a better position to determine what is considered legitimate and appropriate, social media community members experience that specific pre-determined decision-making issues reflect only the project organization’s interests and that the project organization merely seeks to achieve control. The social media community members may also favor lighter participation in general because relational and remunerative content types expect that the members invest time and intellectual input, requiring commitment and a deeper engagement level. Besides, it may be the case that instead of engaging multiple members and achieving the breadth
of engagement, these content types engage only a few members but in a more profound way, achieving the depth of engagement. Nonetheless, based on the research findings, managers are not advised to rely primarily on these content types in their social media communication with external stakeholders because these content types are ineffective in engaging multiple members of the social media community.

### 6.2 Research limitations

This section focuses on addressing the research limitations related to context, theory, conceptual definitions, and philosophical orientation. The methodological limitations related to research design, data collection methods, and analysis procedures were already addressed in section 3.6.

The first area of limitations relates to the context. The context of this dissertation is complex projects, but the empirical research focused on infrastructure projects as a type of complex projects located in Finland. Therefore, the issue of contextuality deserves three brief notions.

First, the characteristics of infrastructure projects may differ from other types of complex projects. While all complex projects share an abundance of similar characteristics and definitions related to their ontology (as explained in section 2.1), differences are likely to emerge in different industries and types of complex projects. These differences may hinder the generalizability of the findings to the entire analytical category of complex projects. Second, the geographical context is Finland, and complex projects likely differ across countries. Although key institutional characteristics are similar, particularly in the Occident (e.g., public sector involvement, legislation, regulations governing the public sector, the western values and culture, external stakeholders’ right of appeal, external stakeholders as end-users), cultural and national differences are likely to emerge in different geographical locations. These kinds of differences between Finland and other countries might hamper the generalizability of the findings to other geographical locations, particularly to those locations outside the Western world. Third, the case study project organizations utilized relational project delivery models. The case projects in A1 and A3 involved alliance contractual models, and the case project in A2 also relied on a similar kind of relational approach. Indeed, the use of relational delivery models may favor and even enable some of the research findings that required intensive collaboration among the project actors, such as some of the organizing solutions in A1 or some of the practices in A2. Since choosing a contractual model is an endogenous variable, caution must be applied in generalizing the findings to complex projects that have chosen, e.g., more transaction-oriented project delivery forms. Based on the three contextuality issues, I encourage further research to delve into other types of complex projects, geographical locations, and other contractual models.

The second limitation is that of theoretical. Stakeholder theory was the theoretical foundation of this dissertation that evidently guided both the empirical and theoretical research. While stakeholder theory was a self-evident choice for approaching the dissertation phenomenon and addressing the overarching RQ,
it may have also provided a restricted viewpoint offering limited insights. The dissertation phenomenon could have been approached from other theoretical perspectives that might have yielded different insights. For mitigating this issue, the dissertation as a whole relied on theoretical triangulation (Farquhar et al., 2020) because such theoretical pluralism may be a suitable fit with case study research, overcoming a theoretically too narrow perspective (Hoque et al., 2013). The research articles utilized different theoretical perspectives, concepts, data, and data analyses to examine the sub-RQs, after which the overarching RQ was approached and theory was built of the overarching research phenomenon by accounting for the differing interpretations. Specifically, A1 relied on the theory of organizing as a problem-solving process with abductive, qualitative data analysis, A2 on stakeholder theory and inductive, qualitative data analysis, and A3 on uses and gratifications theory with deductive, quantitative data analysis. I believe that theoretical triangulation facilitated overcoming the possibly too narrow viewpoint on the dissertation phenomenon. Even though stakeholder theory can be considered a theoretical limitation of this dissertation, it is also worth mentioning that it certainly offered focus and guidance crucial for researching any phenomenon. In other words, despite being a limitation, stakeholder theory is also one of the strengths of this dissertation.

The third limitation relates to the pivotal study concept of stakeholder engagement. The overarching definition followed Greenwood’s (2007) approach, where the concept is defined as the managerial activity of an organization. The definition was a deliberate choice and focus point for the research, and it was well-suited for the purposes of this dissertation, especially matching well with the overarching research phenomenon and ontoepistemological approach. The conceptual definition was also well-suited for the empirical research, matching well with the articles’ research phenomena and utilized theories as explained in section 2.5. Although I was able to select a suitable, clearly defined, and well-justified view on the phenomenon from the jungle of definitions that abound in management literature, being a strength in its own right, this choice still introduces some limitations. The managerial perspective does not consider external stakeholders’ perspective, limiting understanding of external stakeholders’ activities and roles and the interactions between a project organization and its external stakeholders. This conceptual viewpoint focuses purely on the project organization’s agency as the entity that engages external stakeholders, who were considered as somewhat passive entities, objects of engagement. Such a viewpoint assumes that the project organization led all interactions, but in reality, external stakeholders are active and autonomous agents and engagement results from the interactions between the two entities. The adopted perspective thus provides a limited understanding of the research phenomenon. To mitigate the effects of a limited viewpoint partly, a more specific definition related to community members’ engagement level was offered in A3, which considers external stakeholders as more active agents and is consistent with the respective research phenomenon and theory of UGT.

Lastly, the fourth limitation concerns the ontoepistemological choices. Critical realism was the philosophical orientation of this dissertation that had a pivotal
role in defining the phenomenon of stakeholder engagement. Nevertheless, the dissertation phenomenon could have been approached from many other philosophical stances such as interpretivism and positivism that would have likely offered very different viewpoints and insights to stakeholder engagement. Approaching the phenomenon from a different perspective would have meant that the existing theory and research on stakeholder engagement would have been approached differently, likely providing different knowledge gaps and research questions for the dissertation. Ultimately, theoretical frameworks, empirical methods, and findings would have likely been distinct. However, critical realism was a justified and appropriate choice for this dissertation since it matched well with both stakeholder theory, the definition of stakeholder engagement, and case study research. Despite being an ontoepistemological limitation, critical realism is a central strength of this dissertation, offering synergy with the theory and methodology. Based on the ontoepistemological limitation, I encourage future research to rely on other ontological and epistemological perspectives in studying external stakeholder engagement in complex projects. As a final note, it is important to mention that this dissertation studied only one contingent condition (communication, derived from the critical realist view on stakeholder engagement) because researching all possible conditions was simply not feasible. Therefore, the findings do not offer a complete understanding of the phenomenon. Hence, researching other conditions, such as controversy of stakeholder issues, is relevant in future research to develop a more complete understanding of external stakeholder engagement, particularly in complex projects.

6.3 Avenues for future research

This dissertation is but a peek into external stakeholder engagement in complex projects, and many stones were left unturned. Arguably, the scope of this dissertation was modest, and the contributions, if any, were incremental. While stakeholder theory and stakeholder engagement have a relatively long research tradition, further research is required to understand better how and under what conditions different stakeholders are effectively involved in a complex project’s activities to reduce negative impacts and enhance positive impacts. Understanding such nuances of stakeholder engagement is paramount for developing stakeholder theory and better understanding how to enhance the social sustainability and value creation of complex projects. In light of these words, the research of this dissertation sparked four broader research avenues that may be worth investigating in future research. The detailed future research suggestions related to investigating the study phenomena of A1-A3 are elaborated within each dissertation article, respectively.

The first future research avenue relates to developing a deeper understanding of the organizing of external stakeholder engagement in complex projects. This dissertation considered and assumed that the project organization is a relatively homogenous, monolithic entity that organizes external stakeholder engagement. However, the actors (internal stakeholders) within the project organization are, in fact, autonomous as the inter-organizational structure is a pivotal...
characteristic of complex projects. Therefore, there exist some kinds of organi-
zational boundaries, even within the project organization. More importantly, as
was discussed in the theory section, the actors may often have some schism due
to their different interests and objectives that must be overcome, e.g., through
achieving goal alignment, so that external stakeholder engagement can be suc-
cessfully organized. It would be interesting to dig deeper into the internal coor-
dination among the different individuals and actors of a project organization to
understand and explain how different organizing solutions emerge and what
their essential preconditions and antecedents are (e.g., achieving goal align-
ment).

A2 slightly scratched the above idea, as the empirical analysis emphasized un-
derstanding the dynamics among internal stakeholders. Also, the analysis in A1
showed that the organizing of external stakeholder engagement might be per-
sonified in a few active individuals who act as promoters. These individuals may
be the impetus that ensures that the organizing of external stakeholder engage-
ment is successful and necessary organizing solutions are realized. Therefore,
literature on intrapreneurship and intrapreneurs (Antoncic & Hisrich, 2001)
may be a promising start for this kind of future research to understand the or-
ganizing in detail at the individual level. The methodological approach could be
an in-depth qualitative approach focusing on understanding the internal coordi-
nation process. Analyzing such details of the internal coordination process is
likely to yield more granular insights into the organizing of external stakeholder
engagement. For instance, this kind of analysis may uncover some of the organ-
izing mechanisms that lead to successful external stakeholder engagement.

The second future research avenue relates to developing a better understanding
of the effectiveness of engagement practices in complex projects. The issue
of effectiveness has received very little research attention. While there are a few
exceptions that address the effectiveness of stakeholder engagement (Greenley
& Foxall, 1997; Henisz et al., 2014), these studies focus on a very limited number
of engagement practices and organizational contexts, providing limited under-
standing for complex project management. This dissertation identified several
practices (engagement activities in A1, engagement practices in A2, and social
media in A3) that a project organization can use to engage external stakeholders
timely. It would be essential to move beyond descriptive analyses and explicate
the effectiveness of such practices, both in terms of engaging external stakehold-
ers and complex project performance, to understand what kinds of engagement
practices actually matter and how. However, it is worth noting that a systematic
literature study may be first required to develop a systematic understanding and
categorization of engagement practices that can be used for and measured in
empirical research.

A3 analyzed the effectiveness of social media communication in external
stakeholder engagement, as the study yielded novel understanding of the effec-
tiveness of Facebook as an engagement practice in engaging the social media
community; however, it is just a starting point. It would be useful for further
theory development to analyze the effectiveness of different practices in engag-
ing specific external stakeholder groups for developing an emerging database of
Effective stakeholder engagement practices in complex projects. The previous resonates with what Freeman and colleagues (2010, p. 287) argued about the need to create a database of engagement practices. However, the idea goes a step further by including the effectiveness aspect, being essential for knowing what practices are likely to work and what are likely not to work, and under what circumstances.

Regarding the effectiveness in terms of performance, it would be interesting to study what engagement practices matter for complex projects’ performance. That is, what are the implications of engagement practices for project efficiency (schedule, budget, scope/quality). This kind of research would be beneficial for developing understanding in general of the management of complex projects. Many complex project organizations employ at least some kinds of stakeholder engagement practices, but there is little to no evidence on how these contribute to projects’ performance indicators. This effectiveness could be measured, e.g., through proxies like staying in the schedule (fewer delays as a result of fewer appeals from stakeholders) or staying in scope (fewer design changes as a result of fewer appeals from stakeholders). In-depth case studies and quasi-experimental designs with mixed research methods could be a fruitful starting point for such research. For example, companies known for their research collaboration and experimentation of novel ideas could be approached to find a suitable collaborator for an experimental research design. The different engagement practices could be randomized to different projects within the company’s project portfolio to measure how they impact project performance during, e.g., project planning and/or project execution. The study could control other essential variables, such as project size, type, scope, and controversy of social and environmental issues.

The third future research avenue relates to developing a more detailed understanding of a communications manager’s role in external stakeholder engagement. This dissertation approached communication from the collective perspective of a project organization and analyzed it through UGT. However, in reality, communication happens at the level of individuals. Even in the case project of A3, there was a dedicated communication and PR manager responsible for the communication on Facebook who sent messages to social media community members and replied to community members’ queries. This kind of PR and communication manager responsible for discussing with external stakeholders’ representatives can be considered a boundary spanner that is the interface between the project organization and its external stakeholders (cf. Bhattacharya & Korschun, 2019). It would be interesting to delve deeper into this interface and understand the two-way communication (from the manager to stakeholders and vice versa) and detailed language and rhetoric used by the boundary spanner in different engagement practices (e.g., seminars, workshops and not just in social media) to develop detailed understanding of the communication in external stakeholder engagement. Research on organizational boundaries (Santos & Eisenhardt, 2005) and boundary spanning (Aldrich & Herker, 1977) could offer a promising theoretical framework for such research. In-depth qualitative re-
search designs and participatory and non-participatory observations in different engagement practices may be appropriate for collecting relevant data in such empirical research.

The fourth research avenue gives voice to external stakeholders. This dissertation focused purely on the project organization’s agency as the entity that engages external stakeholders who were considered passive entities, objects of engagement. While this dissertation assumed that the project organization led all interactions (e.g., forming practices for engagement), in reality, external stakeholders are active and autonomous agents, and external stakeholder engagement results from the interactions between the project organization and external stakeholder(s). Hence, it is crucial for further stakeholder theory development to understand better the other side of the coin. Although some research has focused on external stakeholders as the active agents (e.g., Liu et al., 2018; Nguyen et al., 2019; Purvis et al., 2015; Vuorinen & Martinsuo, 2018), a lot remains to be done to fully understand stakeholder engagement in complex projects from external stakeholders’ perspective. The following paragraph provides some preliminary ideas for this research direction.

First, it would be interesting to better understand how different external stakeholders mobilize themselves, what their motivations are, and how they organize their activities to influence complex projects. This kind of research could focus, for example, on an NGO or a local authority as the unit of analysis in a complex project through a single-case study design. Second, analyzing the detailed communication that different external stakeholders use in varying engagement practices to influence complex projects could help better understand the interaction between project organizations and external stakeholders. Research of this kind could utilize, e.g., theories of rhetoric and linguistics and perhaps qualitative research approaches. It would also be interesting to explicate the effectiveness of external stakeholders’ communication and influencing strategies to enhance understanding of how they influence complex projects successfully. This issue could be approached with quantitative research approaches. Third, for constructing a more complete understanding of any successful or effective stakeholder engagement, it would be paramount to analyze the details of the dyadic interaction between a specific external stakeholder group and project organization to uncover the steps and mechanisms that lead to that stakeholder being engaged. This approach could consider external stakeholders’ and a project organization’s perspectives in a balanced manner to understand, e.g., the details of joint value creation that are relevant for developing stakeholder theory and understanding of stakeholder engagement in different organizational contexts (cf. Freudenreich et al., 2020). It would also be especially interesting to extend the previous dyadic idea to network-level and study how stakeholders co-create value with project organizations. The previous is interesting because earlier research has recognized that harnessing the network of external stakeholders can facilitate solving problems, developing novel ideas, and even co-creating innovations, being a potential source of joint value, especially in social media context (Cho et al., 2014; Gálvez-Rodríguez et al., 2018;
Martini et al., 2014; Zhou & Pan, 2016). This kind of research would likely require qualitative, in-depth approaches where the unit of analysis is a stakeholder–project organization dyad or the network as a whole.

The four proposed research avenues are but some starting points for future research related to external stakeholder engagement in complex projects. Stakeholder theory is an ever-evolving collection of different narratives emerged from and subject to multiple interpretations and applications (Miles, 2017). Thus, a plethora of other yet unidentified and unaddressed questions are likely to remain that are worthy of investigation for developing stakeholder theory and understanding of stakeholder engagement. As methodological approaches continue developing and more advanced methods are integrated into the broad field of management studies, more complex questions can be addressed with novel research approaches to develop stakeholder theory and understanding of external stakeholder engagement in complex projects.
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References


External stakeholder engagement is an essential but challenging task in complex project management. This doctoral dissertation studies how project organizations engage external stakeholders in complex projects. The dissertation approaches the phenomenon with three empirical case studies that utilize interviews, project and organization reports, social media data, public documents, and news articles from three complex infrastructure projects as empirical material. The case studies offer new insights about the organizing of external stakeholder engagement, the dynamics between engagement and disengagement practices, and the effectiveness of social media communication in engaging external stakeholders.