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Strategic Leadership Approaches for Stakeholder Management in ICT Projects

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ABSTRACT:
The purpose of this study is to examine strategic leadership approaches for stakeholder management in Information and Communication Technology (ICT) projects and to identify which leadership styles—transformational, transactional, adaptive, hybrid, or a combination thereof—are most effective in coordinating stakeholders, facilitating communication, building trust, and achieving overall project success. Specifically, the study aims to investigate strategic leadership practices applicable to ICT projects, explore how leaders manage relationships among multiple stakeholders, identify leadership challenges in complex ICT settings, and analyze the role of communication and trust as enabling mechanisms for stakeholder coordination.

A quantitative, exploratory research design was employed. Primary data were collected using a structured questionnaire distributed to ICT professionals, including project managers, technical experts, consultants, and stakeholders from public, private, and hybrid projects. The survey targeted professionals in Finland, India, and Nepal. The questionnaire primarily used five-point Likert scale items. Data collection lasted eight weeks via an online survey platform and social media channels (Gmail, LinkedIn). Convenience sampling yielded 56 valid responses. Data were analyzed using Microsoft Excel and SPSS, applying descriptive statistics, crosstabulation, Spearman correlation analysis, and one-sample t-test to identify patterns, relationships, and significant differences in leadership practices, communication effectiveness, trust, and stakeholder management. Cronbach's alpha confirmed reliability.

Results indicate that a hybrid leadership approach combining transformational, transactional, strategic, adaptive, and agile leadership is the most effective for managing stakeholders in ICT projects. Key success factors include leaders' ability to manage conflicting interests, build trust through open communication, and adapt leadership styles to project phases and contextual demands. The study empirically demonstrates that stakeholder management is integral to leadership approaches rather than a separate managerial activity.

The value of this research lies in integrating leadership theory with stakeholder management theory and highlighting the importance of context-sensitive, hybrid leadership styles in ICT settings. The study recommends that organizations develop hybrid leadership capabilities, reinforce stakeholder engagement routines, and focus on communication and trust building to enhance project performance. It provides empirical evidence on the effectiveness of hybrid leadership in stakeholder management within the ICT sector and contributes new insights into how leadership can adapt to complex, dynamic project environments.

KEYWORDS: Strategic leadership; stakeholder management; ICT projects; transformational leadership; hybrid leadership.

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Abbreviations

Abbreviation	Full Form
AI	Artificial Intelligence
EU	European Union
GDPR	General Data Protection Regulation
ICT	Information and Communication Technology
IoT	Internet of Things
IT	Information Technology
NIS2	Network and Information Security Directive 2
OECD	Organization for Economic Co-operation and Development
P	P-value
SD	Standard Deviation
SPSS	Statistical Package for the Social Sciences
VUCA	Volatility, Uncertainty, Complexity, Ambiguity
WEF	World Economic Forum
A	Cronbach's Alpha

1 Introduction

Information and communication technology (ICT) projects are often characterized by the involvement of numerous stakeholders spanning different organizations, disciplines, and national contexts (Aaltonen & Kujala, 2016). These stakeholders contribute to the project with varying skills, resources, and perspectives (Hosseini et al., 2016). Government agencies are generally interested in compliance with the rules and serving the population, but private corporations are more interested in innovation and business success (Rialti & Filieri, 2024). Technology providers bring technical capabilities, while end users provide feedback on usability and accessibility (Chapman, 2024).

This diversity can improve project performance (Flyvbjerg, 2014). Various perspectives may enhance creativity, support better decision-making, and lead to new technological solutions (Morkan et al., 2023). Flyvbjerg (2014) and Morkan et al. (2023) show that effective stakeholder engagement can make projects more resilient and help minimize risks of failure, such as cost overruns in large ICT projects. Strategic leaders of digital transformation programs also play a significant role in ensuring that organizational goals are met through ICT investments. They assist in coordinating various stakeholders, responding to regulatory changes, and creating value for all parties (Rialti & Filieri, 2024).

Nevertheless, the multiplicity of stakeholders is also problematic (Aaltonen & Kujala, 2016). Differences in organizational culture, professional practices, language, and expectations may lead to misunderstandings, disagreements, and coordination difficulties (Aaltonen & Kujala, 2016). According to Aaltonen and Kujala (2016), stakeholder relationship management and effective communication are critical factors for project success. Consequently, leaders need strong communication and interpersonal skills to ensure cooperation among diverse stakeholder groups toward shared project goals (Ochieng & Price, 2010).

Research by Dacre et al. (2021) and Whyte (2019) highlights that ICT projects are not purely technical undertakings. They involve interactions between technology, users,

institutions, and society, as explained by Geels (2004). Consequently, leaders must operate across organizational and institutional boundaries, adapt governance frameworks, and manage complex stakeholder networks (Shenhar, 2004). Leadership should not focus solely on project schedules and budgets but also on broader system interactions (Shenhar, 2004; Martinsuo & Ahola, 2022).

1.1 Background and Importance

ICT projects have become increasingly important to organizational success and societal infrastructure (Rialti & Filieri, 2024). These projects are characterized by their size, complexity, and the multiplicity of stakeholders from different organizational backgrounds (Chapman, 2024). The success of ICT projects depends not only on technical implementation but also on sound leadership capable of navigating complex stakeholder relationships (Flyvbjerg, 2014).

Flyvbjerg (2014) and Morkan et al. (2023) demonstrate that appropriate stakeholder engagement contributes to project resilience and helps avoid cost overruns in large-scale IT projects. Strategic leaders of digital transformation programs ensure that ICT investments align with organizational goals, help coordinate stakeholders, adapt to regulatory changes, and create value for all parties (Rialti & Filieri, 2024). Nevertheless, stakeholder diversity presents serious challenges (Aaltonen & Kujala, 2016). Differences in organizational culture, professional practices, language, and expectations can lead to misunderstandings, conflicts, and coordination problems (Aaltonen & Kujala, 2016). Aaltonen and Kujala (2016) identify effective communication and stakeholder relationship management as keys to project success. Therefore, leaders require strong communication and interpersonal skills to bring different stakeholder groups together toward shared project goals (Ochieng & Price, 2010).

ICT projects are socio-technical systems in which technology, users, institutions, and society interact (Geels, 2004; Dacre et al., 2021; Whyte, 2019). This perspective implies that leaders must operate across organizational and institutional boundaries, adjust

governance systems, and cope with complex stakeholder networks (Shenhar, 2004). Leadership here extends beyond scheduling and budgeting to include higher-level system interactions (Shenhar, 2004; Martinsuo & Ahola, 2022).

1.2 Definitions of Key Concepts

This study has several important concepts on a theoretical basis.
Strategic leadership is a long-term-oriented leadership behavior that involves planning, making strategic decisions, and aligning organizational resources to accomplish long-term goals. Strategic leaders also assist organizations or projects to suit various environments, along with facilitating innovation and sustainable performance (Ireland and Hitt, 2024; Crossan, 2023). Strategic leadership in ICT projects involves efforts to create a clear direction, coordination of resources, and alignment of stakeholder interests to create long-term value (Hitt et al., 2022; Crossan, 2023).

Stakeholder Environments are environments of projects where decisions and outcomes are influenced by many individuals, groups, or organizations. These stakeholders can be the project sponsors, government agencies, technology providers, regulatory bodies, and the end users. Various stakeholder groups tend to have different interests, priorities, and influences. In ICT projects, these environments are especially complicated because the providers of technology, regulators, end users, and organizations are all interdependent (Chapman, 2024; Hosseini et al., 2016). Information and Communication Technology (ICT) Projects entail the design, execution, or administration of digital systems, communication networks, and information technologies. ICT projects are usually complicated by the necessity to integrate new technologies, huge investments, and the participation of several organizations. Such projects can include software development, digital infrastructure, artificial intelligence systems, and data analytics platforms.

Stakeholder Management refers to the process of identifying the stakeholders, being aware of their interests and expectations, and guiding relationships toward enhancing project success. Management of the stakeholders is especially vital in the ICT projects

where the various stakeholders stand to significantly affect performance and output. It involves identification of the stakeholders, prioritization of their interests, and direct interaction with the stakeholders during the project life cycle (Bourne, 2015; Mitchell et al., 1997).

1.3 Problem Statement and Research Gap

Despite advances in project management and leadership methods, many ICT projects continue to face significant challenges (Standish Group, 2020). These include deficiencies in stakeholder coordination, communication barriers, and complex governance structures (Project Management Institute, 2023). ICT projects often involve diverse stakeholders with competing interests and priorities, which can result in conflicts, delays, and inefficiencies (Aaltonen & Kujala, 2016).

Research has shown that inadequate stakeholder management, poor leadership, and lack of coordination are among the greatest contributors to project failure (Standish Group, 2020; Project Management Institute, 2023). According to research, 30 percent to 50 percent of ICT projects fail (Standish Group, 2020; Project Management Institute, 2023; Flyvbjerg, 2014). Previous studies have emphasized the importance of leadership and stakeholder involvement for project success (Freeman, 1984; Mitchell et al., 1997; Crosby & Bryson, 2010). Nevertheless, the inability to achieve effective collaboration among parties in many ICT projects is often linked to discrepancies in their goals, communication systems, and decision-making processes (Aaltonen & Kujala, 2016).

1.4 Research Questions

Main Research Question:

What are the strategic leadership approaches for managing stakeholders in ICT projects?

1.5 Research Objectives

The key focus of this thesis is to examine how strategic leadership can be used to manage ICT projects involving multiple stakeholders.

These are the objectives of the study.

1. To investigate strategic leadership practices that can be applied to the context of ICT projects, such as transformational, transactional, adaptive, and hybrid leadership.
2. To explore the relationship among various stakeholders managed by leaders in ICT initiatives, including stakeholder identification, engagement, and conflict resolution.
3. To identify leadership challenges in complex ICT settings, particularly regarding the balance between regulatory compliance and innovation, and the integration of emerging technologies.
4. To analyze the role of communication and trust as enabling mechanisms for stakeholder coordination in ICT projects.

1.6 Scope and Limitations

This thesis examines strategic leadership in ICT projects that involve numerous stakeholders. The areas that the scope covers include the following.

Strategic Leadership Approaches in ICT Projects - This thesis will examine how leadership has been implemented in the management of complex ICT projects which have different stakeholders. It also examines how leaders can make decisions, how they strike a balance between innovation and regulative needs, and how they can achieve long-term project targets using other styles of leadership.

Stakeholder Management - The study examines the mediation of leaders and management of the interrelationship among various stakeholders. The mediation and interconnection of the different stakeholders by the leaders. The stakeholders can include technology suppliers, regulators, partners, and other end users in other sectors. It also

investigates the way trust, communication, and power relationships affect collaboration between the stakeholders.

1.7 Structure of the Thesis

Chapter 1 -Introduction: This chapter brings the background of research, the research problem, the objectives, and the scope. It demonstrates the importance of strategic leadership in ICT projects involving a variety of stakeholders.

Chapter 2 Literature Review: The chapter evaluates the previous research on the topic of strategic leadership and stakeholder management in the ICT projects. It identifies theoretical underpinnings and gaps in the research that inform the research.

Chapter 3 - Methodology: This chapter expounds on research design, data collection, sampling, and ethical considerations.

Chapter 4 - Results: This chapter contains the results of the quantitative survey, i.e., the leadership practices, stakeholder management methods, and governance of ICT projects.

Chapter 5 - Discussion: The chapter will include a discussion of the implications of the results on previous studies, theoretical implications, practical implications, limitations, and future research recommendations.

Chapter 6 - Conclusion: This is the summary of the key results of the study and highlights the need for strategic leadership to enhance stakeholder management and the successful implementation of ICT projects. It also gives the ultimate practice and future research recommendations.

The references list and appendices of additional materials may be found at the bottom of the thesis.

2 Literature Review

The literature review will focus specifically on studies that address strategic leadership and the management of stakeholders within ICT projects (Aaltonen & Kujala, 2016). These are just some of the key areas to understand how leadership may be leveraged to manage complex project environments that are highly defined by the presence of a number of stakeholders, divergent interests (Flyvbjerg, 2014; Morkan et al., 2023). The review is divided into two big parts. The former is concerned with strategic management of leadership in ICT projects and how leadership could be applied to guide stakeholders and manage complex projects. The latter addresses the subject of stakeholder management in ICT projects and the mobilization and management of the various types of stakeholders, including technology vendors, regulators, end users, and sector cross partners, and the role of trust, communication, and power in facilitating cooperation and alignment (Freeman et al., 2021; Aaltonen & Kujala, 2016). The main aim of the literature review is to synthesize and generalize the available information on strategic leadership methods and the management of stakeholders (Hitt et al., 2022; Crossan, 2023).

It also attempts to identify research gaps, particularly in as far as regulatory impacts, the impact of emerging technologies, and the leadership styles in stakeholder-oriented settings are involved (Aggarwal, 2025; Kankanhalli et al., 2019). The review also provides a theoretical angle about how strategic commanders may behave in complexity, unify individuals, and accomplish project objectives in ICT settings, along with the importance of flexibility in dynamic and unclear settings (Heifetz et al., 2009; Pitsis, 2023). The listings contained in the literature expose that there are several prominent themes that will determine the layout of the subsequent chapters. The former is founded on such leadership theories as strategic, transformational, transactional, adaptive, and hybrid leadership, and their applicability to the success of ICT projects. Stakeholder management is the second theme that is concerned with how leaders establish who the stakeholders are, map the stakeholders and priorities, create a balance between competing interests, and how the leaders gain trust and cooperation between different groups of

stakeholders (Mitchell et al., 1997; Bourne, 2015). Together, these themes provide a rational reason to discuss the activity of leaders, who operate in a complex ICT project environment, and support the overall direction of the thesis.

2.1 Leadership Approaches in ICT Projects

ICT projects are complicated, as technology is evolving rapidly, there is a great degree of uncertainty, and the number of diverse stakeholders is large (Chapman, 2024; Hosseini et al., 2016). Good leadership is necessary for steering the success of these projects (Shenhar, 2004; Martinsuo & Ahola, 2022). In this section, the major leadership theories that are applicable in the ICT projects context are surveyed, such as strategic leadership, transformational leadership, transactional leadership, adaptive leadership, and agile leadership. The review critiques the merits and demerits of the two theories, particularly in a stakeholder and regulated environment.

2.1.1 Strategic Leadership

Strategic leadership can be described as the activities, behaviours, and practices that assist in identifying the long-term direction in a project; mobilizing resources and aligning the interests of the various stakeholders to create the long-term value (Hitt et al., 2022; Crossan, 2023). Such leadership is especially relevant when working on projects related to Information and Communication Technology (ICT), as the technology changes occur very quickly, the environment is volatile, and many parties can be involved, including technology vendors, regulators, end users, and organizations, all of which are interdependent (Chapman, 2024; Hosseini et al., 2016). The choice, which the leaders make, is not only business logical but also takes into account the values and prospects of all the stakeholders (Freeman et al., 2021).

The concept of ICT projects as socio-technical systems has become more acceptable and, in this regard, the technology selection affects the project not only environmentally, but in an organizational, political, and societal environment (Whyte, 2019; Dacre et al, 2021).

This is a socio-technical perspective, which relates to the previous theory of innovation systems (Geels, 2004), explaining that ICT projects are not technical exercises only. These include co-evolution of technology, users, institutions, and society (Geels, 2004). The leaders in the projects need to cut and operate on the organizational and institutional frontiers, moving from governance frameworks and dealing with multifaceted stakeholder networks as compared to scheduling and budgeting (Shenhar, 2004; Martinsuo & Ahola, 2022).

It has been found that effective strategic leadership helps in the resilience of the project and minimizes failure, and helps in avoiding such issues as cost overruns in some large ICT projects (Flyvbjerg, 2014; Morkan et al., 2023). Indicatively, digital transformation strategic leaders in programs are oriented in such a way that ICT investments enhance the broader organizational goal, promote cross-ecosystem coordination and flexibility to regulations, and value creation to the stakeholders (Rialti & Filieri, 2024). It is also disclosed, in terms of empirical studies, that organizations that resonate well in terms of strategic IT can deliver better performance and even the leadership in organizations has been identified to be a driver between the application of technology and business performance even the ones that have come about as a result of digital transformation, such as small and medium-sized organizations, where leadership practice, such as change management and talent development, drives success (Gyamerah et al., 2025).

Nevertheless, very little is known about the role of strategic leadership considering the Artificial Intelligence or new ICT projects (Aggarwal, 2025). There is a lack of research on the problems of how the leaders could bring different stakeholders on the same page, manage the ever-changing technology, and create a balance between the different concerns and actualize the objectives of the project (Kankanhalli et al., 2019). Even though strategic leadership may play a role in the realization of sustainable digital transformation, grounded on such strategies as alignment, ecosystem collaboration, and regulatory adaptation, such issues as legacy systems, knowledge disparities, and fragmented governance of the ICT-intensive industries exist in recent reviews.

2.1.2 Transformational Leadership

Transformational leadership entails the influence of people through the motivation of people by an attractive vision, innovation, and taking into consideration individual needs and thoughts (Bass & Riggio, 2006). This type of leadership promotes innovation, digital transformation, and learning in ICT projects (Huang et al., 2023; Guzman-Rodriguez et al., 2021). It is especially useful during the start of a project when leaders need to bring different stakeholders on board with a shared agenda, e.g., digital inclusion, sustainability, or interoperability (European Commission, 2025c; Helfert, 2023). It has been demonstrated that transformational leadership enhances team performance in EU-funded projects (Huang et al., 2023).

Transformational leadership also leads to sustainable operations in digital transformation by setting a clear vision, which is based on new technologies, empowering employees, and promoting collaboration (Gyamerah et al., 2025; Rialti and Filieri, 2024). By providing role models of innovation and adaptation to rapid change, the leaders who apply this style could contribute to the connection between digital capabilities and success in the transformation of small and medium-sized businesses (Gyamerah et al., 2025). Transformational leaders facilitate innovation in virtual teams within agile ICT settings by cultivating a sense of psychological safety and risk-taking tendency within the virtual team (Rahko, 2025).

This strategy is particularly relevant to the ICT projects that require the involvement of various stakeholders, in which the leaders should lead various stakeholders, including vendors, regulators, and end users, towards the same digital vision using scarce resources (Huang et al., 2023). Transformational leaders in agile ICT organizations can enable quicker technology adoption and reduce change resistance in digital transformation

efforts by helping facilitate retrospective processes, empowering cross-functional teams, and adjusting to feedback (Rigby et al., 2020).

However, transformational leadership is restricted in highly regulated projects (Hakkarainen & Hyväri, 2024). Governance-oriented practices should also be used by the leaders to adhere to the rules of procurement, data security, and accountability (Hakkarainen & Hyväri, 2024; Sankaran et al., 2025; Bakhshandeh and McLaughlin, 2025). The topic of its performance in virtual teams as opposed to the traditional environment is also controversial (Rahko, 2025). Transformational leadership should be used together with compliance in regulated settings because the leaders themselves should oversee cybersecurity and act within the limits of EU laws, including NIS2 (European Commission, 2025d).

2.1.3 Transformational Leadership vs Strategic Leadership

In spite of the fact that transformational leadership and strategic leadership might share certain similarities, several significant differences exist in the case of ICT projects. The similarity among all the theories of leadership is that transformational leadership tends to be more people and team-oriented (Bass & Riggio, 2006). It pays more attention to the inspiration of followers, the creation of shared values, and the promotion of creativity and innovation (Bernard M. Bass and Ronald E. Riggio, 2006). This type of leadership can be quite useful when the project is still new, and the leaders have to form a clear vision and align the stakeholders to shared objectives (Huang et al., 2023; Rialti and Filieri, 2024). This, on the other hand, differs from strategic leadership, which is organization-oriented (Hitt et al., 2022). It consists of the long-term planning, resource distribution, and adapting to the external environmental condition (Hitt et al., 2022; Ireland and Hitt, 2024). The decisions made by strategic leaders are at a higher level, and the many stakeholders are considered, which applies in complex ICT projects (Shenhar, 2004).

The differences between the two approaches in terms of change management are one of the notable ones. Transformational leadership encouraged change because it is

inspirational, motivational, and thought-provoking (Bass & Riggio, 2006). On the Flip side, strategic leadership is the transformation of structure and governance and alignment of the projects to the long-term goals (Shenhar, 2004; Crossan, 2023). The other importance or difference is that of regulatory compliance. Transformational leadership is not necessarily effective enough when it is necessary to address strict requirements of regulations and highly regulated environment (Hakkarainen and Hyväri, 2024). Conversely, strategic leadership ensures that the projects are in accordance to laws such as GDPR, NIS2 and the AI Act (European Commission, 2025d). Both leadership styles have salient points and some weaknesses. Transformational leadership is best suited in team motivating and encouraging innovation and can be unsatisfied in controlled settings (Gyamerah et al, 2025). Strategic leadership ensures stability and governance, as well as long-term success, but may not pay enough attention to individual motivation (Rahko, 2025).

Thus, the two forms of leadership styles are to be considered as a complementary one, not as an independent one (Mjaku et al., 2025). Combining transformational leadership and strategic leadership can increase the outcomes of the project (Mjaku et al., 2025; Sankaran et al., 2025). Vision creation and stakeholder support can be facilitated by one form of leadership, and the strategy transfer in efficient execution, compliance, and future sustainability can be provided by the other form of leadership (Mjaku et al., 2025; Sankaran et al., 2025).

2.1.4 Transactional Leadership

Transactional leadership is the kind of leadership that constitutes formal relations between the leader and the subjects of the leader in which the system of performance, the roles and reward schemes lead performance (Bass & Riggio, 2006). This concept was first developed by Bernard M. Bass and Ronald E. Riggio (2006) who took the earlier works of James MacGregor Burns (1978), who distinguished transactional and transformational leadership. In its simplest concept, transactional leadership is based on the principle of exchange whereby leaders offer rewards or give corrective actions based on the

performance of the followers (Bass & Riggio, 2006). This strategy is made up of three elements. First is contingent reward, where the leaders do not simply give rewards but also provide clear expectations to be met when the objectives are met thus improving performance due to out-come based motivation (Bass & Riggio, 2006). Second, management-by-exception (active), where the leaders are continuously overseeing the performance and making corrective measures in case of deviations (Bass & Riggio, 2006). Third, management-by-exception (passive), in which leaders only act when issues have been experienced, and they are interested in correcting them, not preventing them (Bass & Riggio, 2006). Such processes make transactional leadership very systematic and domineering so that work is done effectively, in the required amount of time and according to the organization rules (Johansen et al., 2021).

Transactional leadership is especially applicable in ICT projects where the level of control and accountability is high (Acebes et al., 2024). As an example, in vendor management or outsourcing agreements, it is necessary to have clear contracts, defined deliverables, and performance monitoring (Johansen et al., 2021; Acebes et al., 2024). Transactional leadership addresses these needs by enhancing transparency and reducing uncertainty (Lehtiranta, 2014). Moreover, the style of leadership is very applicable in controlled settings, like the ones regulated by GDPR and NIS2 (European Commission, 2025d). Here, the leaders should guarantee that they adhere to the law and security standards to the letter, and any breach can have severe repercussions (European Commission, 2025d). These requirements are reinforced by transactional leadership with the assistance of organized processes, auditing, and accountability (Lehtiranta, 2014).

Transactional leadership, despite its advantages, also has a number of limitations (Sankaran et al., 2025). It is likely to be short-term performance-oriented and not promote innovation and creativity (Sankaran et al., 2025). Control and rules can decrease flexibility and restrict the capacity to adapt to new challenges in a fast-changing environment like digital transformation projects (Sankaran et al., 2025). Hence, although transactional leadership is stable and disciplined, it might not be adequate in its own right in

complicated and dynamic ICT settings (World Economic Forum, 2025). There has been no comparative research on hybrid leadership models in ICT projects and, specifically, a study comparing EU and non-EU nations or industry sectors and cultures (World Economic Forum, 2025). Recent researchers suggest that hybrid designs are best applied in cases where strategic vision is promoted by transactional compliance in controlled environments, as it is determined by GDPR and NIS2 (Mjaku et al., 2025). The research needs to be conducted in the future, on how well these models of leadership work overtime within the EU public-private partnerships, particularly in a shifting regulatory landscape as AI Act (full implementation until 2026) and NIS2 enforcement. The importance of this break is that it can assist in understanding how hybrid leadership can improve the project performance of complex Stakeholder ICT projects because they would be able to address regulatory pressure and pay for sustaining innovation.

2.1.5 Transactional Leadership vs Strategic Leadership

Transactional leadership and strategic leadership are very different in terms of their focus, approach, and use in the ICT projects.

1. Focus and Orientation

Transactional leadership emphasizes short-term objectives, task accomplishment, and efficiency in operations (Bass & Riggio, 2006). It makes sure that projects are completed in due time, within the budget, and to the set standards.

Strategic leadership, in turn, is concerned with long-term goals, sustainability, and the overall success of the organization (Hitt et al., 2022).

2. Decision-Making Approach

Transactional leadership is based on official power and decision-making with the help of rules. Leaders adhere to the laid-down procedures and command obedience (Bass & Riggio, 2006).

Strategic leadership entails dynamic and adaptive decision-making, taking into account the external environments, uncertainties, and opportunities in the future (Shenhar, 2004).

3. Stakeholder Management

The stakeholders of transactional leadership are governed by contracts, obligations, and performance agreements.

Strategic leadership, however, concentrates on alignment of stakeholder interests and generation of long-term value in a network of actors (Freeman et al., 2021).

4. Innovation and Flexibility

Transactional leadership can be detrimental to innovation because of the need to control and standardize.

Innovation is facilitated by strategic leadership, which promotes flexibility, education, and compatibility with new technologies like AI and IoT (Aggarwal, 2025).

5. ICT Projects Role

Transactional leadership is critical in ICT projects in terms of compliance, risk management, and accountability, particularly in regulated settings such as EU-funded projects.

Strategic leadership is essential in dealing with complexity, making project alignment with long-term objectives, and facilitating the cooperation of multiple stakeholders (Sankaran et al., 2025).

6. Complementarity

Transactional and strategic leadership are complementary, as opposed to being opposite methods. Transactional leadership offers the framework and regulation to achieve the reliability of execution, whereas strategic leadership offers flexibility and sustainability. A combination of both methods is especially useful in ICT-related projects of a complex nature that demand both adherence and novelty (Mjaku et al., 2025).

Despite the literature indicating the importance of transactional and strategic leadership, various notable gaps exist as well, such as the absence of comparative studies that directly analyze these two types of leadership in ICT projects, especially as far as the performance and innovation outcomes are concerned. There is also a gap in empirical research on the interaction between transactional and strategic leadership in actual project contexts, as only limited studies have suggested that the two leadership styles can be combined to be effective, and it is therefore not clear how these two styles can be

practically integrated (Mjaku et al., 2025). Moreover, there is a scarcity of literature on the applicability of these leadership methods in rigid EU regulatory frameworks like GDPR, NIS2, and the AI Act. Lastly, they need to do more research on the application of transactional leadership to assist in compliance and control without limiting innovation in digital transformation projects (World Economic Forum, 2025).

2.1.6 Adaptive and Agile Leadership

The aim of adaptive leadership is to assist humanity in collaborative efforts to solve complicated issues that can be addressed with ease using technical expertise (Heifetz et al., 2009; Pitsis, 2023). The technology in ICT projects is evolving rapidly, user requirements can also shift often, and the regulations are not always obvious, so the principle of adaptive leadership proves to be quite useful (Teuber & Wolfert, 2024; Osman and Lindsay, 2019). Agile leadership is also related to it, namely flexibility, continual learning, and making decisions as a team (Rigby et al., 2020). Both present the argument regarding the necessity of shared learning, teamwork, and distributed decision making in unstable, unpredictable, complicated, and ambiguous (VUCA) ICT environments (Heifetz et al., 2009; Rigby et al., 2020). Adaptive leadership makes it very clear that there is a distinction that exists between technical issues (that can be addressed by experts) and adaptive issues (that demand a change in values, beliefs, and behaviours) (Heifetz et al., 2009). This is especially relevant where ICT projects are faced with conflicting stakeholder interests, ethical issues in AI, or changing social expectations about digital control and use of data (Aggarwal, 2025; Zhang et al., 2025). Practically, this implies that leaders must provide a safe environment to open dialogue among various stakeholders on the issues of tension, test solutions, and come to a consensus because technical solutions cannot solve human, ethical, or regulatory dilemmas (Heifetz et al., 2009).

Agile and adaptive leadership are highly prevalent in the software development, digital services, and pilot projects within the EU ICT projects (Huang et al., 2023; European Commission, 2025e). Adaptive leadership can be used, e.g., to assist projects in meeting cybersecurity and data protection regulations like NIS2 and GDPR (European

Commission, 2025d), and to operate in resilient complex systems of governance (Floricel et al., 2023). Adaptive leaders assist in responding collectively to a new threat within the scope of joint exercises, risk sharing, and cooperation platforms, whereas agile practices allow the teams to change the modes of security control and technical settings at will with minimal changes to compliance rules.

Nevertheless, this raises a dilemma. Agile groups are more favorable to be flexible, and the EU-public-sector regulations must include clear plans, strict procedures with adequate documentation (Hakkarainen and Hyväri, 2024; Johansen et al., 2021). This degree of tension in public ICT project - where procurement regulations stipulate that technical specifications must be fixed, that there must be criteria to be followed in assessment, and audit trails that are detailed can be counterproductive to agile and iterative working - is not unique. Cybersecurity decisions are the personal responsibility of the managers under NIS2, and this puts an even greater pressure on the control and documentation maintenance (European Commission, 2025d). This leads to restriction of experimenting and taking risks, which is important in adaptive leadership. In the same manner, the EU. A less complicated form of your sentence is as follows: AI Act is founded on the level of risk, documentation, human control, and monitoring. Such demands can also slacken the efforts of agile, will create time to experiment, and shift the emphasis from the creative solution of problems and put more emphasis on following rules (European Commission, 2025d).

It is proposed that adaptive leadership can help EU ICT projects become more resilient, particularly in the case it is combined with the stakeholder theory as a method of managing complex governance systems (Floricel et al., 2023). Recent studies support the idea that strong leadership capabilities in the spheres of clear vision in an uncertain environment, inter-institutional cooperation, sense-making, and relationship management (Uhl-Bien, 2006; Aaltonen & Kujala, 2016). The digital transformation projects in Europe have provided evidence of the fact that adaptive leadership is associated with the heightened capacity to recuperate in case of disruption, enhanced satisfaction of the stakeholders,

the elevated degree of trust, and its capacity to transform to technical changes or regulations (Teuber & Wolfert, 2024). The adaptive leadership concept, together with active stakeholder involvement, can assist in coming up with balanced solutions to innovation and responsibility on regulated ICT systems where purely technical or command-based leadership cannot be applied.

In reality, the actual manifestation of adaptive leadership by EU ICT projects may reside in regulatory sandboxes, collaborative entities in the leadership and continuous learning, mutual decision-making and combined risk management (European Commission, 2025d). Such types of tools enable leaders to support experimentation without loss of documentation, oversight, and reporting mandates under NIS2 and the AI Act. Nevertheless, it is highly reliant on social and cultural skills of leaders like trust-building, equity, and free communication with various groups of people (Ang et al., 2007; Ochieng & Price, 2010).

In spite of all these insights, however, there is a gap in research. Few studies examine adaptive leadership within the EU AI projects in the new AI Act (Aggarwal, 2025; OECD, 2025). The majority of the literature is geared towards the digital transformation in general--, or cyber contract in slight regard to AI-specific concerns, such as the comparison of rapid prototyping with mandatory conformity testing or cross-border EU standards. This, therefore, gives a significant research opportunity in the future.

Studies on adaptive and agile leadership are not sufficient regarding long-term comparison at NIS2 and the AI Act. The areas that the future research might focus on should include: (1) how adaptive leadership is an interaction between personal accountability in context NIS2, (2) how the use of regulatory sandboxes controls and governance platforms demonstrates facilitation of the adaptation, (3) how skills of cultural and relational competences determine the success of the leadership (cross-border EU projects), (4) The research looks at long-term effects, including how fast problems come up and where there are gaps would improve a conception of what the successful leadership in complex,

regulated EU ICT settings is and this would make a direct contribution to the study on leadership in the digital transformation.

2.1.7 Adaptive and Agile Leadership vs Strategic Leadership

Adaptive leadership and strategic leadership have differences in that they focus on, approach, and apply to ICT projects, whereas they can complement each other. Adaptive leadership is the process of solving complex and uncertain problems with the help of learning, collaboration, and behaviour change (Heifetz et al., 2009). Strategic leadership is less focused on the short-term and competitive advantage and is determined by the organizational direction (Hitt et al., 2022). Adaptive leadership is addressing an adaptive challenge, which necessitates changing values and practices (Heifetz et al., 2009).

Strategic leadership lays emphasis on bigger organizational problems like position, resource allocation, and long-term planning (Shenhar, 2004). Adaptive leadership promotes decentralized and participative decision making involving many stakeholders (Heifetz et al., 2009). Adaptive leadership emphasizes flexibility and trial and error. Strategic leadership is a focal point between flexibility and structure as the emphasis lies on balancing action against long-term purposes (Hitt et al., 2022; Shenhar, 2004). Adaptive leadership can be applied in uncertainty, innovation, and stakeholder management conflicts in specific projects in AI and digital transformation (Aggarwal, 2025). Strategic leadership is very relevant in the assurance of long-term sustainability, regulatory alignment, and coordination in complex project ecosystems.

2.1.8 Hybrid Leadership: Combining Multiple Approaches for ICT Projects

Hybrid leadership means a strategic integration of several styles of leadership, such as transformational, transactional, strategic, and adaptive, to meet the complex demands of the Stakeholder ICT projects (Mjaku et al., 2025; Sankaran et al., 2025). In contrast to single-style methods, which suppose that there exists a universal best way of leading, hybrid leadership acknowledges that various project stages or stakeholder groups,

regulatory contexts, and other technological uncertainties demand different leadership behaviours (Aaltonen et al., 2025; Chapman, 2024).

There are four reasons why hybrid leadership is needed in ICT projects. First, government agencies, as well as private corporations, regulators, technology providers, and end-users represent diverse stakeholders, whose interests and power sources are different (Freeman et al., 2021; Aaltonen & Kujala, 2016). Second, the complexity of regulation means that leaders must strike a balance between compliance (which is better tackled by transactional leadership) and innovation (which is better tackled by transformational or adaptive leadership) (European Commission, 2025d; Harake, 2025). Third, the dynamics of project phases imply that initiation needs transformational leadership in order to develop a vision, execution needs transactional leadership in order to achieve accountability, and closure needs strategic leadership in order to enable knowledge transfer and long-term value realization (Blockley and Godfrey, 2000; Shenhar, 2004). Fourth, technological uncertainty requires an adaptive flexibility of a strategic direction, where modern technologies like AI, IoT, and blockchain bring swift change that can be effectively handled only by single-style approaches (Aggarwal, 2025; Kankanhalli et al., 2019).

The key to successful hybrid leadership in ICT projects lies in the capacity to combine four approaches that are complementary, and each has its role to play. The transformational component offers a vision and stakeholder alignment and is the most widely stressed when initiating the project and going through a strategic change (Bass & Riggio, 2006; Huang et al., 2023). The transactional aspect guarantees accountability and regulatory adherence and is most important when executing a project and in highly regulated settings (Johansen et al., 2021; Hakkarainen & Hyväri, 2024). The strategic aspect ensures long-term direction and value-generation across the entire scope of the project and that ICT investments serve higher organizational and societal objectives (Hitt et al., 2022; Ireland and Hitt, 2024). The adaptive component facilitates flexibility and learning through trial and error, and it is especially beneficial when things are uncertain or technologically disrupted (Heifetz et al., 2009; Teuber and Wolfert, 2024). These four

elements are not exclusive but complementary in that competent hybrid leaders can assess the situational requirements and use the right mixes of such strategies as circumstances change (Mjaku et al., 2025).

The best way of comprehending hybrid leadership is as a contingent model as opposed to a prescription. The success of every combination of leadership style is contingent on contextual factors, and four major contingency factors have been determined in the literature. Initially, the styles that are best suited to a project phase include transformational in the initiation phase, transactional in the execution phase, strategic in the overall phase, and adaptive in the uncertainty phase (Blockley & Godfrey, 2000; Shenhar, 2004). Second, regulatory complexity affects the emphasis required: projects in highly regulated settings like GDPR, NIS2, or the AI Act must be more focused on transactional and compliance-oriented leadership behaviours, whereas projects in less regulated settings might prefer to adopt the adaptive and transformational approaches (European Commission, 2025d; Hakkarainen & Hyväri, 2024).

Third, the composition of the team impacts the leadership demands: virtual, distributed, and cross-cultural teams need more adaptive leadership than co-located teams, especially when members are located in different time zones, languages, and cultural backgrounds (Rahko, 2025; Ochieng and Price, 2010). Fourth, the needs of leadership are defined by technological uncertainty: the more uncertain the project is associated with an emerging technology, the more adaptive and agile leadership approaches can be adopted to respond to the rapid change, and the more mature and stable the technologies, the higher the relevance of transactional and strategic leadership is (Aggarwal, 2025; Kankanhalli et al., 2019).

The complex stakeholders' environment of ICT projects has clear benefits of hybrid leadership as compared to single-style leadership. Concerning stakeholder management, single-style approaches use a single-size-fits-all approach to engagement, and hybrid leadership engages stakeholders based on their type, power, and urgency. In terms of

compliance and innovation, single-style strategies compel a trade-off between the two priorities, whereas hybrid leadership endeavours to fulfill both at the same time. Regarding the ability to adapt with the project phases, the single-style approaches lack the capability to be able to adapt as the project changes, but the hybrid leadership approach enables the styles to change depending on the need during initiation to closure. Lastly, when it comes to addressing uncertainty, single-style leadership is more likely to be either inflexible (when transactional) or self-destructive (when purely adaptive), whereas hybrid leadership offers a flexible response within defined governance structures (Mjaku et al., 2025).

Although there is an increase in the importance of hybrid leadership, a number of research gaps still exist. To begin with, there are not many longitudinal studies that explore the dynamics of hybrid leadership practices during the years of multi-year ICT projects. Second, there is limited comparative research within regulatory regimes (e.g., EU vs. non-EU, pre-- vs. post-implementation of AI Act). Third, the processes by which leaders are able to integrate conflicting styles (e.g., transactional control and adaptive flexibility) are yet to be explored (Mjaku et al., 2025). Fourth, the impact of the emerging technologies, especially AI, on facilitating or limiting hybrid leadership is under-researched (Aggarwal, 2025; Kankanhalli et al., 2019).

Hybrid leadership is a combination of transformational, transactional, strategic, and adaptive leadership to meet the complex needs of Stakeholder ICT projects. The rationale of hybrid leadership is based on four pillars, namely: stakeholder diversity, regulatory complexity, project phase dynamics, and technological uncertainty. The applicability of hybrid leadership is based on contingency aspects such as project stage, complexity of regular tasks, team structure, and uncertainty in technology. With the ICT projects continually increasing in complexity, regulatory complexity, and technological uncertainty, hybrid leadership is likely to become not only preferable but also the key to project success. Nonetheless, important gaps in the literature on longitudinal evolution,

comparisons across regions, integration processes, and the contribution of new technologies to hybrid leadership still exist.

2.2 Stakeholder Management Theory

The stakeholder theory proposed by Freeman (1984) has seen three aspects conceptualized that are interlaced and encompass descriptive, instrumental, and normative aspects (Donaldson & Preston, 1995). The thesis pays significant attention to the instrumental and normative aspects in order to provide a discussion on how strategic leaders can balance the performance goals with the ethical concerns when engaging the controlled stakeholders in ICT projects.

2.2.1 Freeman's Stakeholder Management Theory

Stakeholder theory, originally developed by Freeman (1984), is typically divided into three dimensions: descriptive, instrumental, and normative (Donaldson & Preston, 1995). The most common is the classification offered by Donaldson and Preston (1995), who termed stakeholder theory with three approaches that are different yet related to each other:

Table 1. Aspects of Stakeholder Theory (adapted from Donaldson & Preston, 1995).

Aspect / Branch	**What It Focuses On**	**Purpose / Nature**	**Example in ICT Projects (from your thesis)**
Descriptive	Describes how organizations and managers actually behave toward stakeholders	Observational / "What is happening?"	How project leaders in EU ICT projects currently identify and engage regulators, vendors, and end users

Instrumental	Examines the connections between stakeholder management and organizational/project performance	Strategic / "What works for success?"	Using stakeholder engagement to reduce risks, avoid delays, and improve project outcomes in Stakeholder ICT initiatives
Normative	Argues that stakeholders have basic moral rights and should be treated ethically and fairly	Ethical / Philosophical / "What should we do?"	Considering end users' privacy rights and societal impact under the EU AI Act and GDPR, even if it slows innovation

Freeman (1984) introduced the concept of stakeholder theory, where he assumed that organizations and projects are developed with relations between different stakeholders that add to the results (Freeman et al., 2021). This concept is highly significant in terms of ICT projects, as numerous stakeholders are engaged in them, and digital technologies significantly influence society (Huemann et al., 2016; Eskerod & Menghwar, 2025). The parties in EU ICT projects tend to be very numerous, and encompass, but are not limited to, the relevant authorities, the companies in question, the citizens and regulators, which, in turn, is one of the key problems in the management of stakeholder leadership (Aaltonen et al., 2025; Ominde et al., 2025). This theory begins to lose the preoccupation with shareholders as its single-minded goal, and develops a relational orientation, in which the success of the project will be achieved through how much they can identify, interact, and harmonize the expectations of the various interests involved, including users who desire privacy and access and regulators who desire the use of technology to be both legal and ethical.

The main logic of stakeholder theory is that organizations and projects are not isolated but belong to the networks of relationships and interconnections where values are created through interaction and cooperation (Freeman et al., 2021). With ICT projects, such interdependence is even stronger, as with the help of digital technologies, the behavior

changes, data flows across borders, and technical decisions are made that affect the fairness and quality, the privacy, and the trust citizens place in it. EU ICT projects, including EU projects funded by Horizon Europe, Digital Europe Program, etc., often involve a wide range of different stakeholders such as national authorities, technology companies, universities, non-governmental organizations, and the citizens as indirect users (European Commission, 2025c). Although this diversity is enhancing inclusive innovation, it poses a problem of coordination and leadership.

Strategically, the demands of the stakeholder theory would have leaders see beyond the necessity to accomplish the task at hand as fast as they can. Rather, leaders must be value-oriented, legitimacy, and a desirable social effect (Hörisch et al., 2025). Leaders must strike a balance between various and even conflicting interests and should also assist EU digital policy goals like data protection, cybersecurity, and digital inclusion (European Commission, 2025d). The stakeholder theory requires strategic leaders to acquire the competencies required to know what the stakeholders require, create trust, manage conflicts, and make ethical decisions. Practically, it implies the shift of the narrow-minded approach of managing stakeholders simply to reduce the risk to the broader one, in which stakeholder engagement needs to be viewed as a tool of innovation, trust, and long-term project resilience.

Table 2. Stakeholder Salience Model (adapted from Mitchell, Agle & Wood (1997)).

Salience Level	Stakeholder Class	Stakeholder Type	Power	Legitimacy	Urgency
None	Non-stakeholder	Non-stakeholder (8)	✗	✗	✗
Low (Latent)	Latent	Dormant (1)	✓	✗	✗

Salience Level	Stake-holder Class	Stakeholder Type	Power	Legiti-macy	Ur-gency
		Discretionary (2)	✗	✓	✗
		Demanding (3)	✗	✗	✓
Moderate (Expectant)	Expectant	Dominant (4)	✓	✓	✗
		Dependent (6)	✗	✓	✓
		Dangerous (5)	✓	✗	✓
High (Defini-tive)	Definitive	Definitive (7)	✓	✓	✓

Note: The table uses ✓ for the presence of the attribute and ✗ for absence.

This figure illustrates the Stakeholder Salience Model developed by Mitchell, Agle, and Wood (1997), which provides a framework for identifying and prioritizing stakeholders based on three critical attributes:

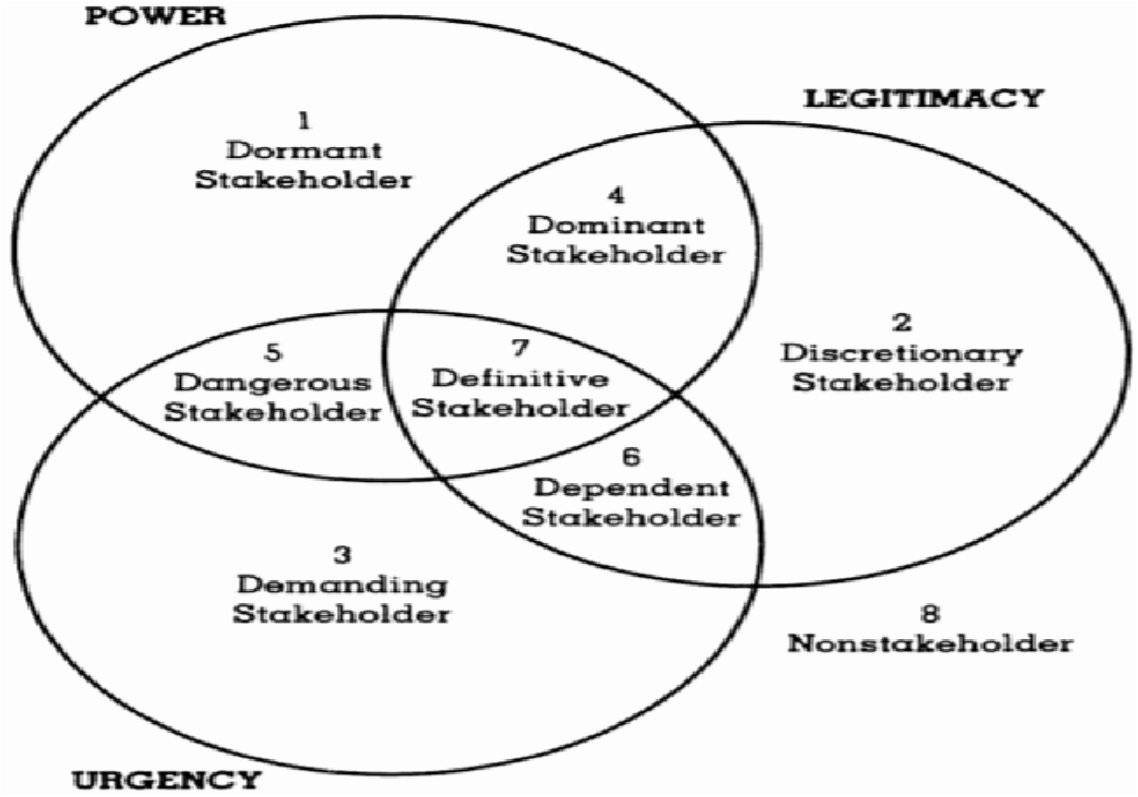


Figure 1. Attributes of Stakeholder Salience Model (Mitchell, Agle & Wood (1997))

Stakeholder Categories:

The model identifies seven categories of stakeholders based on a combination of attributes that the stakeholders hold. Dormant Stakeholders (Power only) are those who possess power, are disconnected, and are not in urgent demand. Urgent Claims but no Power or Legitimacy: Demanding Stakeholders (Urgency only) possess an urgent claim but lack power and legitimacy. Power + Legitimacy (Dominant Stakeholders): A high level of management attention is given to the dominant stakeholders because of their influence. Power (Power + Urgency) and Urgency (Power + Urgency) are dangerous, can be forceful, and even violent. Dependent Stakeholders (Legitimacy + Urgency): Dependent stakeholders are those that are at the mercy of others because they lack the power to have their voices heard. Lastly, Definitive Stakeholders (Power + Legitimacy + Urgency) have each of the three qualities and thus are prioritized as the most important ones. This model is especially helpful in the context of ICT projects, where strategic leaders need to manage stakeholders, as it allows identifying the key stakeholders who should be addressed immediately, facilitates effective distribution of resources to stakeholder

engagement, and becomes aware of possible conflicts or challenges, balancing competing interests effectively, and ensuring compliance with legal requirements that have been developed within the EU, such as GDPR, NIS2, or the AI Act, by being able to identify.

The figure is a pictorial representation of the overlapping circles of the three attributes, with clear stakeholders in the Centre where the three attributes overlap. Some people claim that there are two forms of application of stakeholder theory: instrumental and normative (Donaldson and Preston, 1995). The instrumental perspective relates to project performance and stakeholder management; stakeholder management is viewed as a tool to drive the project to provide outcomes, e.g., limiting resistance, coordinating, and protecting the project image. The normative perspective serves morality and accountability in such a manner that the stakeholders have a moral right to be considered, even in cases where this is not expected to enhance the outcome of the project.

The discrepancy between instrumental and normative strategies supposes a certain significance within the highly controlled and Stakeholder ICT space. In the example of the developers of system AI in high-risk applications, stakeholders, such as the affected users and civil society, need to be engaged in the process of risk and rights impact assessment in accordance with the EU AI Act (European Commission, 2025d). This does not simply occur because of being a law-abiding citizen, but social values should be incorporated in the fabric of systems. Similarly, NIS2 will dictate that management work with stakeholders in cybersecurity governance to enable joint responsibility rather than the top-down approach. Leaders developing the two (instrumental and normative) have the capability of developing trust, legitimacy, and resilience in the long run as compared to those using instrumental approaches, and they may lose their stakeholders or get entangled with the regulators.

The usage of stakeholder theory on new EU AI and ICT ecosystems remains under-researched (OECD, 2025). Although existing literature outlines stakeholder associations in complicated initiatives, limited literature exists that shows the manner in which leaders

manage ethical and performance conflicts in actual initiatives under changing rules like the AI Act (phase implementation shall occur until 2026), NIS2, or large EU-funded business relations. Specifically, research gaps exist around: (1) how leaders can balance the pace and maintains control in regard to ethical innovation in AI-based ICT projects; (2) how ethical stakeholder engagement positively impacts trust and legitimacy; (3) how working in cultural, sectoral, or national differences affects stakeholder management in the EU; (4) the role of cultural, sectoral, or national differences in terms of stakeholder Saving these holes would help achieve why strategic leadership can do more to use the stakeholder theory to ensure responsible, inclusive and successfully ICT projects delivery in the evolving digital regulatory environment in Europe.

2.2.2 Stakeholder Mapping and Prioritization in ICT Projects

Power-interest matrix and stakeholder salience model are some of the tools of stakeholder mapping and prioritization, which are common in the project management industry. To identify the stakeholders and establish the areas that the project leaders need to focus on (Bourne, 2015; Mitchell et al., 1997; Aaltonen, 2013; Nguyen et al., 2018). Classification of the stakeholders according to their power and interest is done in a power-interest matrix. These are helpful in assisting the leaders to make good decisions on whether to keep them close or to keep them content, or even to keep them well-informed or just observe them. The stakeholder salience model (Mitchell et al., 1997) is more detailed, as in this case we aim at examining three aspects, which include power (the capacity to affect the decision), legitimacy (a socially accepted claim), and urgency (how fast they want their problem resolved). Stakeholders, with all three of them, are the most important.

The application of these tools in ICT projects is frequently difficult because the impact of the stakeholders varies over time with the changes in technology, politics, or organizations (Floricel et al., 2023; Lehtinen et al., 2019; Ominde et al., 2025). Rapid technological advances- like generative AI, edge computing, or some novel approach to cybersecurity - can turn hitherto minor stakeholders significantly more powerful in an instant, such as,

e.g., a cybersecurity regulator or a group of data ethics. The most relevant stakeholders are also changed by political changes, whether they are the digital policies of the new EU or the current supply chain tensions in an increasingly globally connected world. Organizational changes. Even within a Horizon Europe project, the impact of stakeholders is restructured once more due to changes, e.g., a new partner to the project or a change in funding priorities. During a rapidly evolving ICT project, even a fixed stakeholder map becomes obsolete, which may result in poor decision-making, slow response to risks, or the absence of an opportunity to collaborate.

EU ICT projects are the best examples of how new regulations and new technology may alter the significance of stakeholders within a very short period. As an illustration, the step-by-step presentation of the EU AI Act (2025-2026) assigns added significance to conformity assessment bodies, regulators, and civil society groups that are concerned with fundamental rights (European Commission, 2025d). These actors might not have been significant in previous stages of the project. Similarly, NIS2 also extends the cybersecurity accountability to more industries and focuses on the supply chain risks, which places vendors (along with infrastructure operators) in a central role. The trends in GDPR implementation are also ongoing to empower the data subjects and the supervisory authorities. With such alterations, scholars promote the Stakeholder management of stakeholders, whereby the leadership of a company reviews stakeholder roles and redefines the ways of engaging them periodically (Aaltonen et al., 2025; Sankaran et al., 2025). This involves regular reviews, tracking changes in regulations, tracking technologies, and varying levels of engagement with a change in the urgency or power of a stakeholder.

EU digital programs are also governed with the use of stakeholder mapping tools (European Commission, 2025c). Within the framework of projects like Digital Europe and Horizon Europe, stakeholder mapping comes in handy regarding the formation of consortia, risk-sharing, transparency and reporting, among others, as well as aligning the projects with the EU policy goals, including digital inclusion, sustainability, and ethical AI. Leaders can come up with governance structures to represent the stakeholders by showing

clearly the power and interests of stakeholders, which will ensure that they are represented and accountable through steering groups, advisory boards, or panels of citizens. When properly exploited, these instruments can contribute to the validity of the projects and will make the management of conflicts and adherence to the EU governance regulations more straightforward.

Nevertheless, some researchers have indicated that conventional stakeholder models are incompatible with agile ICT projects (Chapman, 2024). Agile project undertakings are based on the basis of flexibility, a short period of development, and varying requirements that do not fit the category of fixed stakeholders. The requirements of the stakeholders concerned in agile ICT projects, as is the norm with EU digital services and software pilots, may change in each development cycle depending on user feedback, testing outcomes, or new regulations. Stakeholder mappings generated at the very start of a project can thus be deceptive and prevent adaptive engagement.

To overcome these constraints, scholars suggest that dynamic and technology-assisted methods of managing stakeholders should be employed. These include:
Constant observation of stakeholders with the help of digital dashboards, communication analysis, or monitoring of regulatory changes. Connecting reviews of stakeholders to agile practices (refining stakeholder priorities in backlog/planning meetings), Identification of change in the impact of stakeholders through AIs-based tools by receiving policy texts, news, or communication information (Kankanhalli et al., 2019).

Hybrid approaches in order to merge traditional matrices with network analysis in order to capture changing relationships in complex ICT ecosystems better
Research gap: There is an indefinite demand for real-time stakeholder mapping techniques in ICT projects, particularly in disciplines like AI, IoT, and other emerging technologies (Kankanhalli et al., 2019). The majority of available tools are either fixed or semi-dynamic, and there is scanty empirical evidence on the fully real-time or AI-based methods in the controlled EU context.

How IoT data, such as user or devices in real-time can be used to promote dynamic stakeholder analysis. The way digitalization platforms, such as artificial intelligence to analyze data or blockchain-based data management, can contribute to continuing the mapping operations and remain GDPR-compliant. Comparative studies of dynamic versus static stakeholder methods in EU multi-country projects in the light of resilience, trust, costs of compliance, and innovation results.

These gaps expose the lack of enhancement in the stakeholder mapping that is not only technology-facilitated but also realistic for leaders to enhance the shifting roles of stakeholders in the ever-evolving digital and regulatory landscape of the EU.

2.2.3 Power, Interest, and Influence in Stakeholder Networks

In ICT projects, power plays a very significant role because these projects involve multiple stakeholders with varying levels of authority and influence (Nguyen et al., 2018; Lehtinen et al., 2023). Formal roles, the regulation of authority, the control that the stakeholders possess over funding, the control they have over technical knowledge, and the control they have over data grant them power (Nguyen et al., 2018; Lehtinen et al., 2023). In the framework of EU ICT projects, the power exercised is divided among various levels, from local to national institutions, and the European Union level. This is the reflection of a multi-level system of governance (European Commission, 2025e; Hakkarainen & Hyväri, 2024).

The previous studies indicate that leadership in these environments implies the manipulation of unequal power dynamics through negotiation, establishing alliances, and familiarity with official rules and institutions (Uhl-Bien, 2006; Morkan et al., 2023). Nevertheless, the limited quantity of empirical studies that directly examine the issue of leadership and power relations in EU ICT projects produces an obvious research gap (Ominde et al., 2025). The existing research literature is mostly devoted to the power of single organizations and does not provide much insight into cross-border and multi-

organization ICT projects that involve numerous and various stakeholders (Martinsuo & Ahola, 2022).

It is also revealed that power imbalances are one of the factors that influence trust among stakeholders between EU public-private partnerships (Lehtinen, 2021). Besides this, the current debates of centralized control of the EU and decentralized stakeholder involvement complicate leadership (Hörisch et al., 2025).

2.3 Collaboration, Trust, and Communication in ICT Projects

Collaboration, Trust, and Communication in ICT Projects explains how people can work together, communicate, and develop a good rapport to become successful in ICT projects. Effective communication helps leaders and other stakeholders to clarify the goals, tasks, and problems of a project. Trust is also necessary as individuals will be able to collaborate with each other, exchange information, and find solutions more easily, especially when it comes to projects that are capable of uniting many different organizations and even nations. Collaboration is a team where individuals, with varied roles, interests, or cultures, work together to achieve common objectives. ICT projects need a strong leader to foster a communication culture, create trust, and manage stakeholders to make sure everyone is on board and the project is effective.

2.3.1 Communication in Stakeholder ICT Projects

“Leadership of ICT projects is a major component of communication, particularly when the teams are distributed in various places and cultures” (Ochieng & Price, 2010). "Effective communication systems unite the formal reporting toolkit with informal sensemaking to interpret the project goals, risks, and outcomes in the same manner" (Lehtinen et al., 2019; Whyte, 2019). Formal tools - status reports, dashboards, risk registers, compliance documents, etc. - make work transparent, traceable, and accountable, which is highly essential in regulated EU projects. Informal sensemaking entails conversation, narration, group discussion, and interpersonal communication, which enable people to

make sense of complex or changing situations in common, eradicating confusion and developing a common ground.

EU ICT projects are usually represented in more than a single language and culture (Dsouza, 2025). It is of utmost importance that strategic leaders develop communication systems to support transparency, inclusion, and coordination across organizations and countries (Huang et al., 2023). The leaders are to develop explicit rules of communication, such as multilingual project glossaries, frequent meetings (live and taped), and meeting styles that are culturally sensitive. Concurrently, they ought to encourage inclusive practice, giving all the stakeholders, including the small partners/end-users, a voice.

Debate: There are issues with high-context and low-context cultures with virtual ICT projects (Hall, 1976). In high-context cultures (e.g., most Southern and Eastern European or Asian teams), there is implicit communication, relationship, and shared understanding in communication. In low-context cultures (e.g., Northern European or Anglo-Saxon teams) there is explicit and task-oriented communication. These differences are more prominent with virtual ICT projects because the non-verbal cues are not present and can lead to problems in understanding, time wastage, and trust-related problems. Leaders should use culturally sensitive methods of communication, like stating expectations, building relationships, and mixing formal and informal communication channels to assist in closing these gaps.

The use of Artificial Intelligence-assisted communication in EU stakeholders' projects is not well researched (Aggarwal, 2025). New AI applications, including real-time language conversion, sentiment detection, auto-generated summaries, or meeting assistants, may assist the teams to communicate more effectively to ease language barriers and to be more perceived in the environment of multilingual EU ICT projects. Nevertheless, the number of papers that examine their practical implementation, their effectiveness, the ethical concerns (e.g. translation bias or A.I. summary) and their observance of the regulations (e.g., GDPR or transparency requirements on A.I. act) is limited. It is a significant

research gap, particularly given the fact that EU ICT projects have, over time, depended on digital collaboration tools in multicultural and multilingual teams.

2.3.2 Trust and Coordination in Stakeholder Environments

"In ICT projects where there are numerous stakeholders, trust is essential in the working environment" (Lehtiranta & Kärnä, 2014). It helps to minimize coordination issues, promotes more convenient knowledge sharing, and forms of governance (including formal governance) (Lehtiranta & Kärnä, 2014). "Trust is a type of social glue in projects involving many interaction partners, particularly where cross-border consortia are involved, between the government and businesses, or where the digital system is regulated" (Lehtiranta & Kärnä, 2014). It is less expensive, assists in less formal solutions to problems, and allows knowledge to circulate in a manner that cannot be done with contracts. In complex contract projects and with strict rules, leaders are relevant in the process of trust-building and sustenance (Uhl-Bien, 2006; Aaltonen et al., 2025). The trust that leaders foster by communicating with them consistently, making decisions, displaying competence and honesty, openness when necessary, and their approach to handling conflicts, gives a sense of psychological safety and encourages the stakeholders involved to be committed. Multi-cultural intercultural trust must be established in EU ICT projects, which are more often inter- and multi-country, they are intercultural and multi-cultural, and the leaders must show that they are aware of the cultural issues and norms and provide equal participation to all partners.

Nevertheless, trust is delicate in high-stakes projects or power-difference projects (Nguyen et al., 2018). It is harder to maintain trust in projects where the level of financial, reputational, or societal risk is high (e.g., AI systems affecting fundamental rights or critical infrastructures in the scope of NIS2). The presence of power disparity between the large tech vendors and small subcontractors, say, or regulatory authorities and project teams can bring about suspicion and less openness, and provoke defensive behaviors. There are also extra risks of geopolitical tensions, different priorities within the European Union, or the concern about data and ethics of the people towards politically or

geographically sensitive projects (World Economic Forum, 2025). Such incidents as a hack attack, regulatory failure, or conflict over a project may lead to loss of trust within a very short time unless they are well handled.

The question of whether trust is applicable to substitute for the formal rules in regulated ICT projects is a subject of debate (Hörisch et al., 2025). Other scholars think that high-trust settings can be governed less stringently, less work is needed to draft elaborate contracts, less time is wasted in overseeing or negotiating bureaucracy, and working with confidence is an advantage of flexibility and creativity. Other people believe that even in highly regulated markets (GDPR, NIS2, AI Act), formal rules and accountability remain necessary since, in instances of systemic risks, compliance is not a sufficient strategy, and the protection of the interests of the population. It appears that there is consensus among the majority of studies that trust and formal governance should be hand-in-hand in the combination. Trust, in its turn, is required to place rules into good practice (e.g., information sharing on a voluntary basis), whereas certain organizational pillars are solid (organizational roles, audits, dispute resolution) and trust becomes less risky. This is taken into consideration in the EU sphere of ICT projects, in the public-private partnerships, where the leaders are forced to tradeoff between contracts (procurement rules, liability provision) and relationships (joint workshop, sharing the risk registers, transparent reporting), in order to maintain collaborations effectively throughout the long projects.

In general, it is trust that makes the difference in cooperation in the Stakeholder ICT projects. However, because it is weak in the high-stakes situations which are controlled and politically multifaceted, leaders must adopt both the relational approach and the formal approach. This is the balance of the future of ensuring resilient, legitimate, and innovative results in the changing digital world of Europe.

2.4 Research Gaps and Future Directions

As much as the research conducted has been very broad in the field of leadership, stakeholder management, and Information and Communication Technology (ICT) project

governance, there are gaps in the literature that ought to be filled in. They include the lack of connection between the strategic leadership approaches and the stakeholder theory insofar as it concerns ICT projects. Even though these two areas are usually analyzed independently, not much research has been done to determine the influence of strategic leadership approaches on stakeholder management procedures and performance in multifaceted ICT project systems.

The other missing gap is that most of the research is undertaken on individual organizations. Many of the studies address leadership and governance based on a single company or project without taking into consideration the large-scale, multi-level ICT systems that encompass numerous organizations, industries, and nations. Such cross-border, and cross-sector projects entail various rules and regulations, and cultural environment, and these bring about leadership and governance issues that are not all researched.

It is also characterized by a little knowledge of the way new digital technologies, including artificial intelligence, data analytics, and the Internet of Things, transform leadership roles and governance of a project (Aggarwal, 2025; Kankanhalli et al., 2019). Such technologies present new decision-making procedures, data dependency, automation, and ethical questions (Zhang et al., 2025), which have the potential to change power, accountability, and interactions with stakeholders. The existing literature does not offer much insight into the methods leaders can use to change their strategies and forms of governance to address such technologies. The other gaps are the contribution of the leaders in terms of trust, communication, and power among the different stakeholders. ICT projects are usually characterized by many actors, such as technology vendors, system integrators, regulators, end users, public authorities, and organizations representing various sectors that are privately owned. Different groups have varying interests, expectations, and influence, hence making coordination and collaboration difficult. Although literature acknowledges the role of trust and communication, it does not reveal much on the ways leaders develop, sustain, and restore trust in the long run in stakeholder ICT projects (Nguyen et al., 2018; Hörisch et al., 2025).

Most of the studies are also conducted in cross-sectional designs that reveal the relations between leaders and stakeholders at a given point in time. This implies that we do not have much information on how leadership, stakeholder influence, and governance vary throughout the lifecycle of an ICT project, which is initiated and planned all the way up to its implementation, operation, and closure. Such changes as a change in power, stakeholder involvement, and leadership adjustment are not fully comprehended in the long run. Moreover, leadership styles and stakeholder management are some of the issues that are likely to be considered in studies. Few studies have been conducted regarding the partnership of the two fields, especially in complex and uncertain ICT settings. Much is also not known about how leaders address technological problems, innovation pressure, and the organizational constraints governing the different relationships that address the various stakeholders. This division renders the effectiveness of leadership in actual ICT projects hard to comprehend.

Overall, existing research provides limited guidance on how strategic leaders can handle complex ICT projects with many stakeholders. There is limited research on how leaders handle competing interests, promote collaboration, and manage power while working toward project goals in dynamic and uncertain organizational environments. In summary, studies show that strategic leadership is a key factor in driving the success, sustainability, and overall value of ICT projects. Further studies are needed to fill these gaps by doing: Carry out longitudinal and mixed-method research to study how the change in leadership practices, stakeholder relations, and governance has changed over time. Explore adaptive and strategic leadership in Stakeholder ICT projects, especially in contingent and uncertain environments.

Study how the technologies that are currently gaining momentum, such as artificial intelligence, the Internet of Things, and data analytics, affect leadership, the decision-making process, and governance. Consider trust, communication, and power among different stakeholder groups and their impact on the outcome of a project. To have a better

perspective of leadership in the multifaceted, multi-level, and cross-border projects, make emphasis not on individual organizations themselves, but on the global and regional ICT ecosystems.

2.5 Conceptual framework

This paper establishes a conceptual framework to explain how strategic leadership relates to stakeholder management in Information and Communication Technology (ICT) projects, and the extent to which this relationship manifests itself in the outcomes of an overall project. The framework combines information on the strategic leadership theory and the stakeholder management theory to create a structured interpretation of the topics of leadership effectiveness within a complex stakeholder environment. Strategic leadership is the center of the framework and is regarded as the major independent variable. The adoption of various leadership styles, such as transformational, transactional, adaptive, and hybrid leadership styles, is a strategy of strategic leadership in ICT projects. The above leadership styles allow the project leaders to align stakeholder interests, respond to environmental uncertainties, and steer pro-projects into long-term value creation.

Figure 2. Conceptual framework

The framework implies that stakeholder management directly mediates the variable, and thus, strategic leadership has an impact on it. Stakeholder management involves recognizing, mapping, prioritizing, and engaging the stakeholders through the project management lifecycle. Since it is necessary to balance the interests of various parties and to examine potential conflicts, leadership in ICT projects where stakeholders often engage government agencies, private organizations, providers of technology, and end users is important. As strategic leaders, they assist in aligning the stakeholders by ensuring that there is collaboration, participation, and balancing competing demands. Additionally, the framework is that the better the stakeholder management, the better the results of the project, which is a dependent variable in this research. The project's success, including being delivered on time, improved performance, minimized conflicts, and general satisfaction of the stakeholders are the measure of the project outcomes. Based on the framework, it is not only the technical implementation that determines the success of ICT projects, but a lot is determined by how the stakeholders are managed by proper leadership practices.

In addition to these primary relationships, there are some facilitating and mediating relationships, i.e., communication, power relationships, and the regulatory environment. Communication is taken as a significant process that can be used by leaders to communicate with stakeholders, exchange information, and be transparent. Trust will enable collaboration and minimize coordination issues among the stakeholders. Power relations have an impact on stakeholders and decision-making processes, especially in multi-organizational ICT environments. Leadership approaches are influenced by regulatory frameworks like GDPR and NIS2, which impose compliance and governance guidelines. Overall, the conceptual framework suggests that the strategic leadership indirectly enhances the outcomes of projects through its positive influence in managing stakeholders, and the communication, trust, and contextual factors support or restrain such relationships. This combined view emphasizes the need to have an adaptive and context-sensitive leadership in handling the complex ICT projects with various stakeholders.

2.6 Chapter Summary

The present chapter has reviewed the literature on the existing studies in the area of strategic leadership, stakeholder management, and Information and Communication Technology (ICT) project implementation, which demonstrates that ICT projects have become more complex both in the organizational context and in the context of the public sector. ICT projects are usually characterized by large groups of stakeholders like technical professionals, organizational executives, community governance, commercial collaborators, and end users, all of whom possess numerous interests and expectations and spheres of influence. This is the complexity that causes strategic leadership to be a crucial issue in the success of the project.

Literature stresses that strategic leaders need to have a certain vision and long-term plan for ICT projects, in addition to making sure that the project goals are consistent with the organizational and society goals. Leaders must be efficient in the allocation and coordination of resources, dealing with uncertainty, and directing different groups of stakeholders to mutual results. The tasks in the ICT projects are linked to one another, and the technology is changing fast, hence, leadership is not only the field of traditional project management but also encompasses the capability of understanding complex situations and adapting to change, and the possibility of making continuous decisions.

One of the major leadership roles in complicated ICT projects is stakeholder management. The leaders must identify key players, their source of power, and demands and needs, and must control relations in the project. This entails a balance of diverse demand, building of trust, facilitation of collaboration and transparency, and consistency in communication. The literature shows that trust and collaboration are especially applicable to the ICT projects, which entail the participation of multiple organizations and institutions where formal authority is not always enough to facilitate cooperation.

As much as the governance structures have assisted, there are issues of leadership in the actual sense, that is, in the project structures, project formal controls, and accountability

and coordination are provided. The leaders normally encounter difficulties in trying to align the goals of the stakeholders, conflict management, and keeping the stakeholders engaged in the long-term projects. They increase further in large-scale or state-level ICT projects where regulations, political dynamics, and accountability of the people make the issue harder.

Another gap in the existing studies was also discovered by the review. The concept of strategic leadership is a field of research where empirical evidence is under-researched on the basis of developing strategic leadership over time in the ICT projects, especially those that might include more than a single stakeholder in an organization, countries, or institutions. It also has minimal knowledge of how leadership can handle various groups of stakeholders by adapting to new technologies, digital transformation, and uncertainty. There is a weak understanding of the relationship between leadership practice, stakeholder power, and technological change.

In conclusion, it is noted in the literature that strategic leadership plays a key role in the success, sustainability, and value creation of ICT projects. However, more research is still needed to understand how leaders can manage the complex stakeholder environment, strike the incompatible interests to align their leadership with the technological and institutional environment. Such research would be advantageous to both theory and practice in those novel, improved approaches of leadership in intricate, multi-stakeholder, ICT projects are created.

3. Research Methodology

The chapter elaborates on how the research was conducted to explore the strategic leadership styles in the ICT projects with Stakeholder Management. It provides information about research design, quantitative research, research procedure, data analysis techniques, sampling plans, and ethical issues. The methodology adopted will ensure that the research is systematic and meets the objectives of the research, and will produce credible and reliable results.

3.1 Research Design

This research has a quantitative and exploratory research design that aims at understanding leadership approaches among stakeholders in ICT projects. Advancements with ICT projects tend to be associated with technical and regulatory obstacles and a wide range of stakeholders with varying interests and expectations. These are areas that may necessitate a quantitative approach to leadership in these projects because, through this method, the researcher can be able to measure empirically the leadership approaches in various stakeholders' project environments. It is also exploratory research because the aim of the research was to identify the trends and relations within a field, which has a lack of empirical evidence regarding the subject matter of strategic leadership in stakeholders, in multi-faceted ICT projects.

The methods of quantitative data collection and analysis will help the researcher identify the patterns, relationships, and trends in variables, such as leadership styles, coordination and communication with stakeholders, as well as trust. It enables objective comparisons and enhances the transferability to a particular context. The study is based on a positivist philosophy of research that the reality is objective and is quantifiable with quantifiable variables. Under this study, leadership is defined in terms of observable and quantifiable variables such as leadership, communication, engagement, and trust of the stakeholders.

The data collection method is survey research, where data is collected with the help of ICT experts. It enables analytical generalization where the tendency of trends and relations among others rests on the basis of data that relates to the influence of strategic leadership on the coordination of stakeholders, trust, and alignment of the ICT project.

3.2 Quantitative Method

Primary data is collected using a standardized questionnaire to gather information on professionals in ICT projects involving stakeholders through a quantitative approach. This entails leadership, coordination of stakeholders, communication, and trust. Many of the questions are closed-ended questions rated on a five-point Likert scale (strongly disagree), thus, it is possible to perform statistical analysis and comparison. This way facilitates homogeneity and analysis of responses statistically.

3.2.1 Instrument Development

The concepts of this thesis questionnaire are based on literature related to strategic leadership approaches, stakeholder management, communication, and trust. The questionnaire was divided and connected with the research objectives to make sure that the variables, including leadership approaches, stakeholder identification and prioritization, communication effectiveness, trust, and leadership challenges, were measured. To measure perceptions, there were primarily five-point Likert scale questions. The items were selected from prior works to make sure that the questions were constructed and were reliable, and some were created in the context of the ICT project.

3.3 Research Procedure

A systematic six-step design was used to undertake the study in order to help maintain clarity, ethical and appropriate conduct, and methodological rigor. To begin with, a research framework was designed based on four important research objectives: methods of strategic leadership, stakeholder management, communication, and trust

communication. Second, there was consideration of ethical approval, and it was decided that the study complied with the Code of Conduct on University Research Integrity. Third, the participants were recruited based on industry contacts, such as LinkedIn and ICT organizations. The potential participants were given an information sheet which contained the following details: the purpose of the study, the voluntary nature of participation with the option to withdraw at any time, the assurance of confidentiality and anonymity, and the details concerning the storage, use, and disposal of the data.

Fourth, informed consent was achieved by making the participants familiar with the information sheet and giving their consent with the selection of a consent box at the very start of the survey. Fifth, the sample consisted of an online survey method that will comprise eight weeks of data collection, between 16 January 2026 and 15 March 2026. Invitations were sent by mail and by using social media, with a reminder sent to the used mail and social media platforms three weeks later, and targeted the Finnish, Indian, and Nepalese ICT professionals. Then, the data collected were statistically analyzed as provided in Section 3.3.1 of the study.

3.3.1 Data Analysis Techniques

This study was statistically analysed using Microsoft Excel and IBM SPSS Statistics to extract and identify patterns, trends, and relationships within the data collected. To guarantee a complete grasp of the data and to justify the research aims, a mix of descriptive and inferential statistical methods was implemented.

In the very beginning, the features of the sample were summarized with the help of descriptive statistics, which help to grasp the main tendencies of the data. Frequencies, percentages, means, and standard deviations were used to measure respondents due to the demographic profile, their professional roles, and their overall responses to survey items. This move provided a clear-cut background over the distribution and central tendencies of the data.

In order to get more insight into relationships between categorical variables, a cross-tabulation analysis was performed. This process facilitated comparison of various groups that were based on roles, project types, and project sizes, where differences in leadership practices and stakeholder management approaches across different settings were identified. Cross-tabulation also served to illustrate some possible patterns not necessarily apparent immediately with descriptive statistics per se.

Besides that, the correlation analysis developed by Spearman was also used, as the analysis was required to consider the strength and the direction of the relationships between the key variables, i.e., the variables are leadership, communication, trust, and stakeholder outcomes. As the research was done on the basis of ordinal data obtained after the research through Likert scale-based questions, the rank correlation using Spearman was deemed suitable. This method allowed establishing whether positive or negative changes in one variable were linked to changes in another, therefore, giving a clue as to how leadership -behaviours and communication strategies relate to changes in stakeholder engagement. Additionally, there were one-sample t-tests that were done to determine whether the means of the responses of the selected variables differed significantly from the neutral midpoint value of 3 on the Likert scale. This analysis contributed to the conclusion that the respondents generally agreed or dissented with certain statements and provided a more in-depth overview of the overall perception and trends included in the dataset.

All these statistical methods resulted in a strong analysis framework to consider the data. This approach allowed the study to come up with significant results about the interaction between strategic leadership practices and the stakeholder engagement strategies in ICT projects. With such broad-based approach, both general patterns and statistically significant relationships were determined, and this fortified the validity and reliability of the research findings.

3.4 Research Sampling

The research used a non-probability convenience sampling approach to seek ICT practitioners who are engaged in multi-stakeholder projects. The sampling design was used due to access limitations and the inability to access a sampling frame across multiple organizations and industries.

Participants included project managers, program managers, technical staff, consultants, and stakeholders (clients, vendors, and public-sector stakeholders). The respondent selection criteria ensured that they had been involved in ICT projects that involved stakeholder coordination, governance, and decision-making.

The survey was distributed to 100 people, and responses were received from 56 respondents from varied roles and projects. A total of 16 survey questions were included. This further enhances the representativeness of the data. Convenience sampling may limit research credibility, but it is appropriate for exploratory research on a niche topic.

3.4.1 Sample Size Justification

Even though the sample size of 56 respondents is quite small, it is suitable for exploratory quantitative research in a specific area like ICT project leadership. The size of the sample conforms to generally accepted minimum required levels (30-50 responses) of simple statistical analysis, such as descriptive statistics, correlation analysis, and t-tests. A larger sample is usually desirable; however, in certain areas of expertise, exploratory studies make use of smaller, yet pertinent samples. It is also appropriate in terms of sample size because it is enough to conduct reliability tests with the help of the Cronbach alpha and to determine significant trends among variables.

3.4.2 Reliability and Validity

In order to maintain the data quality, reliability and validity have been taken into account in this research paper. To test reliability, a test of internal consistency was used to

establish the reliability of a particular test, and Cronbach's alpha was used to measure internal consistency. The item-total statistics were additionally verified to ensure that there was consistency of all items in each construct. The content validity was achieved by using existing literature to formulate survey questions and align these questions with the objectives of the research. Multiple questions in measuring each concept, including the notions of leadership, communication, and trust, helped to support construct validity. Furthermore, pilot testing was also carried out to ensure that the visibility and uniformity of the survey were improved, and this further enhanced the validity of the study.

4. Results

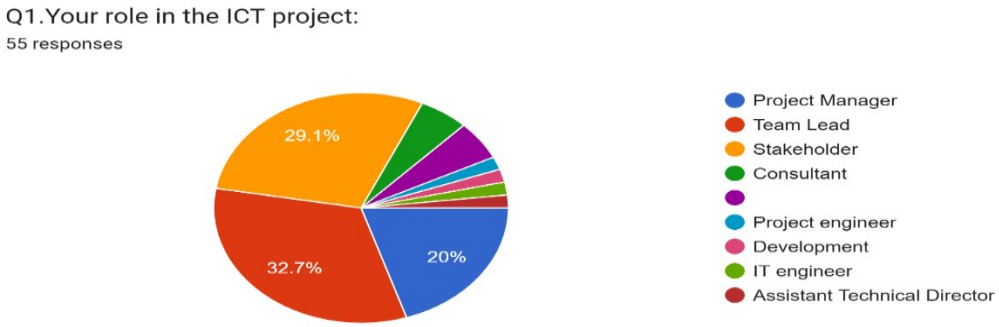
This section describes the results of a quantitative survey, which identifies strategic leadership approaches adopted for stakeholder management in Stakeholder ICT projects. We present our findings in line with the four research objectives: (1) understanding strategic leadership practices relevant for ICT projects, (2) exploring how leaders manage relationships between multiple stakeholders, (3) uncovering leadership challenges in complex ICT contexts, and (4) understanding the role of communication, trust, and power management in facilitating stakeholder coordination.

56 complete survey responses were collected from ICT professionals working across varied project environments, including public-- sector, private-- sector, and hybrid environments. The sample comprises project managers, team leads, stakeholders, technical directors, consultants, and engineers to provide a multi-actor perspective on leadership and stakeholder management practices.

4.1 Sample Characteristics

4.1.1 Respondent Distribution by Role

A total of 56 complete responses were analyzed. Figure 3 presents the distribution of respondents by professional role.



The sample includes diverse perspectives, with stakeholders (25.0%), team leads (23.2%), and project managers (21.4%) representing the largest groups. This distribution ensures a comprehensive multi-actor view of leadership practices and stakeholder management in ICT projects.

4.1.2 Project Size Distribution

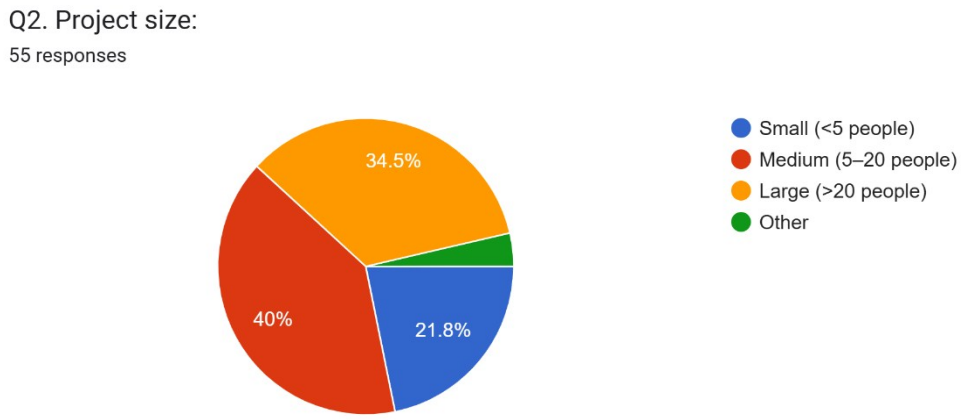


Figure 3. Project Size Distribution

Medium-sized projects (5–20 people) represent the largest category (40%), followed closely by large projects (>20 people) at 34.5%. This distribution allows for comparison of stakeholder management challenges across different project scales.

4.2 Reliability of the Survey Instrument

To assess the internal consistency of the seven-core leadership and stakeholder management items (Q3, Q7, Q8, Q9, Q10, Q11, Q12), Cronbach's alpha coefficient was computed. Table 3 presents the reliability statistics.

Table 3. Reliability Statistics.

Cronbach's Alpha	Cronbach's Alpha (Standardized)	N of Items
0.872	0.879	7

Interpretation: The Cronbach's alpha value of 0.872 exceeds the conventional threshold of 0.70, indicating good internal consistency (Nunnally, 1978). This confirms that the survey items reliably measure the underlying constructs of strategic leadership and stakeholder management in ICT projects.

4.3 Strategic Leadership Practices in ICT Projects

Objective 1: To investigate strategic leadership practices that can be applied to the context of ICT projects, such as transformational, transactional, adaptive, and hybrid leadership.

4.3.1 Perceived Influence of Strategic Leadership

Respondents were asked whether strategic leadership positively influences the success of ICT projects involving multiple stakeholders (Q3).

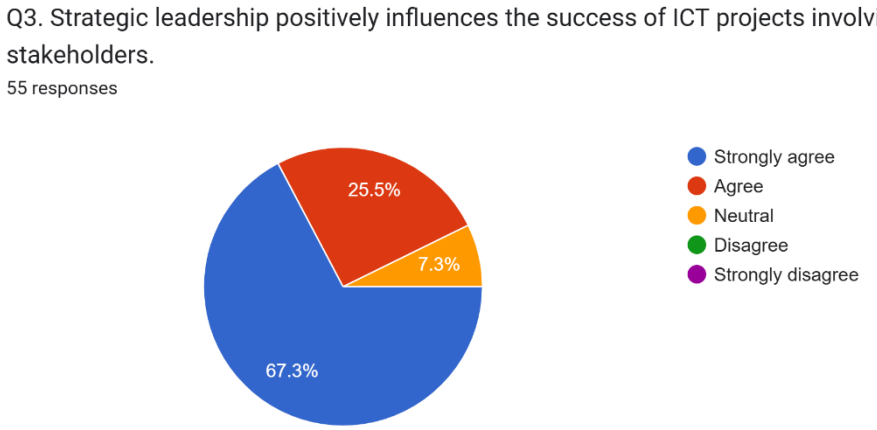


Figure 4. Strategic Leadership Influence on Stakeholder ICT Projects.

Finding: 92.8% of respondents agreed or strongly agreed that strategic leadership positively influences the success of ICT projects involving multiple stakeholders, with 67.3% strongly agreeing. No disagreement was recorded across any sector or role. This near-universal consensus demonstrates that practitioners across all project types recognize strategic leadership as essential for navigating complex Stakeholder ICT environments.

4.3.2 Most Effective Leadership Approaches for Stakeholder Management

Respondents identified which leadership approaches they consider most effective in stakeholders ICT projects (Q4).

Table 4. Leadership Approach Preferences for Stakeholder Management.

Approach	**Frequency**	**Percentage**
Transformational (vision, innovation, motivation)	20	35.7%
Strategic (long-term alignment, stakeholder coordination)	11	19.6%
Transactional (control, accountability, performance-based)	9	16.1%
Adaptive/Agile (flexibility, iterative learning)	11	19.6%
Multiple approaches selected	5	8.9%

Finding: The most common (35.7%) leadership style reported as the best approach for Stakeholder ICT projects was transformational. This result supports the literature, which argues that transformational leaders are able to forge a coalition of disparate stakeholder interests based on shared project goals, primarily through the adoption of vision and motivational inspiration (Bass & Riggio, 2006; Huang et al., 2023).

The equal division of respondents between strategic leadership (19.6%) and adaptive/agile leadership (19.6%) also suggests practitioners are aware of the need to balance

long-term stakeholder alignment with situational flexibility, Modi operandi in these two respective areas. Single-style approaches were least popular with transactional leadership (16.1%), indicating that it was still considered valuable to a large minority of respondents.

Sector-Specific Patterns:

Table 5. Leadership Approach by Project Type.

Project Type	Transformational	Transactional	Strategic	Adaptive/Agile
Public-sector (n=9)	5 (55.6%)	1 (11.1%)	0	1 (11.1%)
Private-sector (n=13)	4 (30.8%)	2 (15.4%)	2 (15.4%)	4 (30.8%)
Hybrid (n=7)	0	1 (14.3%)	5 (71.4%)	0

Transformational leadership was particularly popular among public-sector respondents (55.6%), which may reflect the need to unite diverse public stakeholders-including regulators, citizens, and government agencies-around a common direction. Hybrid projects demonstrated a distinct preference for strategic leadership (71.4%), suggesting that cross-sector stakeholder relationships require more deliberate, long-term coordination approaches.

4.3.3 Hybrid Leadership Model Support

Respondents evaluated whether a hybrid leadership model (combining transformational, transactional, and agile approaches) is more effective than a single style for managing Stakeholder ICT projects (Q9).

Table 6. Hybrid Leadership Support for Stakeholder Management.

Response	Count	Percentage
Strongly agree	26	46.4%
Agree	19	33.9%
Neutral	7	12.5%
Disagree	2	3.6%
Strongly disagree	1	1.8%
Not answered	1	1.8%

Finding: 80.3% of respondents agreed or strongly agreed that hybrid leadership models combining multiple approaches are more effective than single styles for managing stakeholders' ICT projects. This strong endorsement of hybrid leadership suggests that effective stakeholder management requires leaders to adapt their style based on stakeholder needs, project phase, and contextual factors- a finding consistent with Mjaku et al. (2025) and Sankaran et al. (2025).

4.3.4 Transformational Leadership Effectiveness

Respondents evaluated whether transformational leadership improves team performance and innovation in ICT projects, which directly impacts stakeholder satisfaction (Q7).

Table 7. Transformational Leadership Effectiveness for Stakeholder Outcomes.

Response	Count	Percentage
Strongly agree	33	58.9%

Response	Count	Percentage
Agree	17	30.4%
Neutral	3	5.4%
Disagree	0	0%
Strongly disagree	0	0%
Not answered	3	5.4%

Finding: 89.3% of respondents agreed or strongly agreed that transformational leadership improves team performance and innovation. In stakeholder contexts, this finding indicates that transformational leadership helps create shared vision and commitment across diverse stakeholder groups, consistent with Gyamerah et al. (2025) and Rialti and Filieri (2024).

4.3.5 Transactional Leadership and Accountability

Respondents evaluated whether transactional leadership ensures accountability and regulatory compliance in ICT projects, which affects stakeholder trust and confidence (Q8).

Table 8. Transactional Leadership Effectiveness for Stakeholder Accountability.

Response	Count	Percentage
Strongly agree	27	48.2%
Agree	19	33.9%
Neutral	5	8.9%

Response	Count	Percentage
Disagree	2	3.6%
Strongly disagree	0	0%
Not answered	3	5.4%

Finding: 82.1% of respondents agreed or strongly agreed that transactional leadership ensures accountability and regulatory compliance. This finding is particularly relevant for stakeholder management, as regulatory stakeholders (e.g., data protection authorities, cybersecurity regulators) require demonstrated accountability. Transactional leadership provides the structured oversight that builds confidence among compliance-focused stakeholders, especially under frameworks such as GDPR, NIS2, and the AI Act (European Commission, 2025d).

4.4 Stakeholder Management in ICT Projects

Objective 2: To explore how leaders manage relationships among multiple stakeholders in ICT initiatives, including stakeholder identification, engagement, and conflict resolution.

4.4.1 Stakeholder Identification and Prioritization Importance

Respondents evaluated whether stakeholder mapping and prioritization are essential for project success (Q10).

Table 9. Stakeholder Mapping and Prioritization Importance.

Response	Count	Percentage
Strongly agree	32	57.1%

Response	Count	Percentage
Agree	11	19.6%
Neutral	6	10.7%
Disagree	1	1.8%
Strongly disagree	1	1.8%
Not answered	5	8.9%

Finding: 76.7% of respondents agreed or strongly agreed that stakeholder mapping and prioritization are essential for project success. The small proportion of neutral or negative responses (14.3%) suggests that while most practitioners value formal stakeholder identification methods, some may rely on informal approaches or work in contexts where stakeholder identification is less critical.

4.4.2 Challenges in Managing Competing Stakeholder Interests

Respondents rated whether managing competing stakeholder interests is a major challenge in ICT projects (Q14).

Table 10. Challenge Level of Managing Competing Stakeholder Interests.

Response	Count	Percentage
Extremely challenging	16	28.6%
Very challenging	21	37.5%
Moderately challenging	12	21.4%

Response	Count	Percentage
Slightly challenging	3	5.4%
Not challenging	0	0%
Not answered	4	7.1%

Finding: 66.1% of respondents rated managing competing stakeholder interests as "very" or "extremely" challenging, with no respondents indicating it is "not challenging." This finding confirms that stakeholder conflict and competing priorities represent central leadership difficulties in ICT projects, consistent with Aaltonen and Kujala (2016) and Ominde et al. (2025).

Challenge Level by Project Size:

Table 11. Stakeholder Management Challenge by Project Size.

Project Size	Slightly Challenging	Moderately Challenging	Very Challenging	Extremely Challenging
Small (n=12)	1 (8.3%)	2 (16.7%)	4 (33.3%)	2 (16.7%)
Medium (n=20)	2 (10.0%)	5 (25.0%)	7 (35.0%)	4 (20.0%)
Large (n=18)	0	3 (16.7%)	7 (38.9%)	8 (44.4%)

Larger projects face significantly greater stakeholder management challenges. Among large projects (>20 people), 83.3% rated managing competing interests as "very" or "extremely" challenging, compared to 55.0% of medium projects and 50.0% of small

projects. This suggests that stakeholder complexity scales with project size, requiring more sophisticated leadership approaches.

4.4.3 Trust and Stakeholder Collaboration

Respondents evaluated whether trust reduces coordination costs and facilitates collaboration in Stakeholder ICT projects (Q12).

Table 12. Trust Impact on Stakeholder Collaboration.

Response	Count	Percentage
Strongly agree	32	57.1%
Agree	19	33.9%
Neutral	3	5.4%
Disagree	1	1.8%
Strongly disagree	0	0%
Not answered	1	1.8%

Finding: A total of 91.0% (agree to strongly agree) agreed with the assertion that trust lowers coordination costs and promotes collaboration among stakeholders. This finding is important, especially in Stakeholder ICT projects where coordination cannot be fully ensured by formal contracts alone. Trust acts as a governance mechanism that facilitates the sharing of information, decreases transactional cost, and increases psychological safety among stakeholder constellations (Lehtiranta & Kärnä, 2014; Uhl-Bien, 2006).

4.5 Communication, Trust, and Power Management

Objective 4: To study the role of communication, trust, and power management in the coordination of ICT projects with large populations of stakeholders.

The survey results revealed that effective communication is critically important for stakeholder management in ICT projects. As presented in Table 18, 94.6% of respondents agreed or strongly agreed that effective communication is vital for stakeholder ICT project success, with the highest mean score of 4.69 (SD = 0.54) and the largest t-value (23.21, $p < 0.001$). The correlation analysis in Table 17 further supports this finding, as communication demonstrated strong correlations with strategic leadership ($\rho = 0.61$, $p < 0.01$) and trust ($\rho = 0.59$, $p < 0.01$). Trust was also identified as essential, with 91.0% of respondents agreeing that trust reduces coordination costs and facilitates collaboration (Table 12). The mean score for trust was 4.49 (SD = 0.69), which was significantly above neutral ($t = 16.01$, $df = 54$, $p < 0.001$), as shown in Table 18.

Power management emerged as a significant leadership challenge in ICT projects. As presented in Table 10, 66.1% of respondents rated managing competing stakeholder interests as "very" or "extremely" challenging. The severity of this challenge scales with project size, as shown in Table 11. Among large projects (more than 20 people), 83.3% of respondents rated managing competing interests as "very" or "extremely" challenging, compared to 50.0% of small projects. The correlation matrix in Table 17 reveals important interrelationships among these variables: communication serves as the central coordinating mechanism, showing strong correlations with both trust ($\rho = 0.59$) and strategic leadership ($\rho = 0.61$). These statistically significant findings (all $p < 0.001$) provide strong empirical evidence that communication, trust, and power management are interconnected dimensions of effective stakeholder leadership in ICT projects.

4.6 Leadership Challenges in Complex ICT Settings

Objective 3: To find out the leadership issues in complex ICT settings, especially in projects where cross-country cooperation and different regulatory regimes are involved.

4.6.1 Regulatory Compliance vs. Innovation Balance

Respondents indicated how leaders should prioritize highly regulated ICT projects (Q5).

Table 13. Priority Between Compliance and Innovation.

Priority	Frequency	Percentage
Balance both equally	29	51.8%
Innovation over compliance	9	16.1%
Compliance over innovation	6	10.7%
Not sure	1	1.8%
Not answered	11	19.6%

Finding: 51.8% of respondents believe that in highly regulated ICT projects, leaders should balance compliance and innovation equally. Just 10.7% preferred compliance to innovation, and just 16.1% preferred innovation to compliance. As a finding highly relevant under the emerging EU regulations NIS2, and the AI Act (European Commission, 2025d; OECD, 2025), this implies that practitioners resist binary thinking about compliance and innovation as opposing priorities - with successful leadership instead demanding attention to both priorities simultaneously.

4.6.2 Future Research Priorities for ICT Leadership

Respondents identified which areas should be prioritized in future ICT leadership research (Q15).

Table 14. Future ICT Leadership Research Priorities.

Research Area	Frequency	Percentage (of valid responses)
AI governance and ethics	13	33.3%
Adaptive and agile leadership	11	28.2%
Stakeholder collaboration	9	23.1%
Regulatory compliance and digital sovereignty	5	12.8%
Trust-building and communication in virtual teams	3	7.7%

Note: 17 respondents did not specify a priority for this question; multiple selections were counted.

Finding: AI governance and ethics were also selected as a top priority for future ICT leadership research (33.3% of valid responses), along with adaptive and agile leadership (28.2%) and stakeholders' collaboration (23.1%). This finding reflects practitioners' recognition of the transformative nature of emerging technologies -mostly AI– into leadership roles, decision-making processes, and ethical responsibilities associated with ICT projects (Aggarwal, 2025; Kankanhalli et al., 2019; Zhang et al., 2025).

The increase in attention to adaptive and agile leadership (28.2%) indicates a belief among practitioners that flexibility and iterative learning are becoming progressively significant drivers for the management of technological uncertainty and regulatory change. The pre-eminence of stakeholders' collaboration (23.1%) illustrates that stakeholder management continues to be a central focus for the field's leaders, and much needs to be learned about how to better manage project stakeholders in ICT projects.

4.6.3 Emerging Technology Integration

Respondents evaluated whether integrating AI, data analytics, and emerging technologies is critical for future ICT leadership and governance (Q13 in survey - emerging technologies question).

Table 15. Emerging Technology Criticality for Leadership.

Response	Count	Percentage
Strongly agree	29	51.8%
Agree	18	32.1%
Neutral	4	7.1%
Disagree	0	0%
Strongly disagree	0	0%
Not answered	5	8.9%

Finding: 83.9% of respondents agreed or strongly agreed that integrating AI, data analytics, and emerging technologies is critical for future ICT leadership and governance. This strong endorsement indicates that leaders must develop capabilities to leverage emerging technologies not only for project delivery but also for stakeholder management, decision-making, and governance.

4.7 Cross-Tabulation Analysis

4.7.1 Leadership Approach by Stakeholder Challenge Level

Table 16. Leadership Approach by Perceived Stakeholder Challenge Level.

Leadership Approach	Slightly Challenging	Moderately Challenging	Very Challenging	Extremely Challenging
Transformational (n=20)	1 (5%)	4 (20%)	9 (45%)	5 (25%)
Strategic (n=11)	0	2 (18.2%)	4 (36.4%)	4 (36.4%)
Transactional (n=9)	0	1 (11.1%)	3 (33.3%)	3 (33.3%)
Adaptive/Agile (n=11)	0	2 (18.2%)	3 (27.3%)	4 (36.4%)

Finding: Those practitioners with a strategic leadership preference also reported the highest proportion of “extremely challenging” stakeholder management experiences (36.4%), indicating that coordinated long-term approaches to stakeholders are recognized as necessary for those working in the most complex stakeholder settings. Transformational leadership correlated with a more even distribution, 45 percent “very challenging” and 25 percent “extremely challenging.”

4.8 Correlation Analysis Among Key Variables

To examine the relationships between leadership approaches and stakeholder management practices, Spearman's rank-order correlation coefficients (rho) were computed. Table 27 presents the full correlation matrix based on pairwise deletion (N = 45-56).

Table 17. Correlation Matrix (Spearman's Rho) for Key Variables.

Variable	Strongest Relationship	Strength (ρ)	Interpretation
Strategic Leadership (Q3)	Transformational	0.62**	Highly complementary
Transformational (Q7)	Strategic	0.62**	Works with strategic leadership
Transactional (Q8)	Hybrid	0.44**	Supports hybrid model
Hybrid Leadership (Q9)	Strategic	0.55**	Core component of strategy
Stakeholder Mapping (Q10)	Hybrid	0.50**	Linked to leadership effectiveness
Communication (Q11)	Strategic / Trust	0.61** / 0.59**	Central coordination factor
Trust (Q12)	Communication	0.59**	Built through communication
Emerging Tech (Q13)	Communication	0.51**	Requires strong communication
Hybrid Governance (Q14)	Hybrid	0.55**	Supports hybrid leadership

** $p < 0.01$ (2-tailed), * $p < 0.05$ (2-tailed)

Key Findings from Correlation Analysis:

Strategic and Transformational Leadership showed a strong positive correlation (rho = 0.62, $p < 0.01$), indicating these approaches are complementary rather than mutually exclusive. This empirically supports the hybrid leadership model discussed in Section 2.1.7.

Communication (Q11) demonstrated the strongest correlations with most variables, particularly with strategic leadership (rho = 0.61, $p < 0.01$) and trust (rho = 0.59, $p < 0.01$), underscoring its significant role in stakeholder coordination.

Trust (Q12) showed moderate to strong correlations with all leadership approaches (range: 0.35 to 0.59), supporting its role as a governance mechanism that facilitates stakeholder collaboration.

Hybrid Leadership (Q9) correlated strongly with both strategic (rho = 0.55, $p < 0.01$) and transformational (rho = 0.51, $p < 0.01$) approaches, validating the hybrid model concept that leaders draw from multiple traditions.

Stakeholder Mapping (Q10) showed significant positive correlations with all leadership approaches (range: 0.32 to 0.50), confirming that systematic stakeholder identification is integrated with effective leadership practices.

4.9 One-Sample T-Test Results

To determine whether respondent perceptions significantly differed from neutral, one-sample t-tests were conducted for all key variables. The test value was set to 3, representing a neutral response on the 5-point Likert scale. Table 18 presents the results.

Table 18. One-Sample T-Test Results (Test Value = 3).

Variable	Mean	SD	Sig.
Q11 (Communication)	4.69	0.54	<0.001
Q3 (Strategic)	4.66	0.61	<0.001
Q7 (Transform)	4.57	0.60	<0.001
Q12 (Trust)	4.49	0.69	<0.001
Q13 (Emerging Tech)	4.49	0.64	<0.001

Variable	Mean	SD	Sig.
Q14 (HybridGov)	4.43	0.71	<0.001
Q10 (Mapping)	4.41	0.90	<0.001
Q8 (Transactional)	4.34	0.81	<0.001
Q9 (Hybrid)	4.25	0.92	<0.001

Finding: All variables had mean scores significantly above the neutral value of 3 ($p < 0.001$ for all tests). Communication (Q11) had the highest mean (4.69) and the largest t-value (23.21), indicating the strongest consensus among respondents regarding the critical importance of communication in stakeholders' ICT projects.

4.10 Summary

This chapter provided quantitative results on strategic leadership and stakeholder management in stakeholders' ICT projects, based on 56 survey responses. The results demonstrate:
Overall, strong support for strategic leadership (91.1%), influencing stakeholder coordination and consequently project success; transformational leadership (35.7%) was identified as the most effective single approach.

High support for hybrid leadership models (80.3%); underlining the notion that stakeholder management and engagement are essential, this finding suggests that leaders must develop their style according to the needs of stakeholders, which may vary along project evolution, while adjusting for contextual environmental factors.

Stakeholder management: One of the central challenges (66.1% find competing interests very/extremely challenging), this existence challenge grows with complexity in size (83.3%

report very/extremely challenging for large projects). Stakeholder identification preferences are influenced by the Stakeholder Salience Model, indicating the challenge of paying attention to power, legitimacy, and urgency in relation to complex ICT environments.

Trust through leader communication, governance mechanisms, and regulatory compliance (91.0% agree that trust reduces coordination costs. Project phase or stage emerged as the most significant factor impacting leadership effectiveness in stakeholder engagement, requiring an adaptive approach. Sector-specific differences in leadership style: transformational in the public sector, strategic for hybrid projects to align multiple stakeholders.

Areas requiring further study, prioritized in future research within the areas of AI governance and ethics (33.3%), adaptive and agile leadership (28.2%), and multi-stakeholder/taking perspectives from industry institutions (23.1%). In [Chapter 5], this discussion will be interpreted within the context of the literature review and theoretical framework concerning strategic leadership and stakeholder management, so these findings lay an empirical basis for that chapter.

5. Discussion

5.1 Introduction

This chapter compares the empirical results described in Chapter 4 with the relevant literature review as well as the theoretical frameworks outlined in Chapter 2. The discussion is structured based on the four research objectives: (1) strategic leadership practices in information and communication technology (ICT) projects, (2) stakeholder management relationships, (3) leadership challenges existed within complex ICT contexts, and (4) the role of communication, trust, and power management. The chapter further discusses theoretical contributions, practical implications, limitations, and future directions for research.

5.2 Discussion of Strategic Leadership Practices

5.2.1 The Centrality of Strategic Leadership in Stakeholders' ICT Projects

As a result, the fact that 91.1% of respondents expressed agreement/strongly agree with the statement that strategic leadership positively influences stakeholders' focused ICT project success strongly validates the theoretical framework outlined in Section 2.1.1. This almost uniform agreement among practitioners of varying types and at different governance levels suggests that they understand the need for a more strategic, top-tier approach to handling complexity in ICT projects.

This finding is consistent with Hitt et al. Strategic leadership is also defined as building long-term direction, resource mobilization, and aligning competing interests of diverse stakeholders to create a value-enabling state (Hitt et al.). The socio-technical nature of ICT projects, referring to the interaction between technologies, users, institutions, and society (Geels, 2004; Dacre et al., 2021; Whyte, 2019), demands leaders who act across organizational and institutional boundaries.

These findings add to existing literature by providing quantitative evidence from practitioners that strategic leadership approaches are not simply desirable but essential for the success of Stakeholder ICT projects. The need for understanding the importance of strategic leadership in digital transformation is supported by previous research (Flyvbjerg, 2014; Morkan et al., 2023; Rialti & Filieri, 2024), but the current study adds empirical support validating strategic leadership's role as strongly perceived by practitioners working on a diverse array of ICT projects across varied contexts.

5.2.2 Transformational Leadership as the Most Preferred Approach

35.7% of respondents rated transformational leadership as the most effective, far outweighing strategic (19.6%), adaptive/agile (19.6%), or transactional (16.1%) leadership. This is in line with previous studies such as Bass and Riggio (2006) and Huang et al. (2023), who argue that transformational leadership-by vision creation, inspiration, and intellectual stimulation-is especially important to ICT projects.

That transformational leadership was the overwhelming preference for public-sector projects (55.6%) is of particular note. In addition, such projects also usually include multiple stakeholders with different interests: government agencies that seek to maximize delivery at the lowest cost, regulatory bodies with often conflicting priorities, citizens who want value for money, and private vendors. With transformational leadership, leaders can align these different stakeholders with common societal missions, such as digital inclusion, sustainability, or interoperability (European Commission 2025c; Helfert 2023). Yet the statistic that 16.1% of respondents still favor transactional leadership, while another 80.3% support hybrid models, indicates that transformational leadership is not a "one size fits all" model in controlled settings. The transformational model has its limits for highly regulated projects, where structured oversight is essential and needs to be in place due to procurement rules, data security requirements, and accountability mechanisms (Hakkarainen & Hyväri, 2024; Sankaran et al., 2025), as we have noted earlier in Section 2.1.2 This provides support for the need of transformational leadership with governance-based practices present at regulated environments.

5.2.3 Hybrid Leadership Models as the Preferred Approach

This is in particularly strong empirical support of theoretical formulations espoused by Mjaku et al., who show, collectively, that 80.3% of respondents agree or strongly agree that hybrid leadership models are superior to single models based on style alone. (2025) and Sankaran et al. (2025). This finding is especially important since it signals practitioner aversion toward universalist notions of leadership in favor of contingent, adaptive approaches.

The compelling endorsement of hybrid leadership fills the identified research gap in Section 2.1.3 by highlighting how little comparative work has been done on hybrid leadership models, especially with regard to ICT projects. Leaders are drawing upon multiple leadership traditions–transformational to galvanize support and coalesce alignment; transactional to ensure accountability and compliance; and adaptive/agile for flexibility and short iteration of learning–to maximize outcomes in both the long-- and short-term. This insight is especially relevant to EU ICT projects under evolving regulations, namely NIS2 and the AI Act. As discussed in Section 2.1.4, such regulations entail high compliance costs (including risk assessment, transparency reporting, and human oversight) while also requiring innovation or adaptation [115]. Hybrid leadership models provide a pathway to achieving balance between these competing demands, consistent with the finding that 51.8% of respondents favored them balancing compliance and innovation equally (Section 4.5.1).

5.2.4 Sector-Specific Leadership Preferences

Table 11's sector-specific trends add important contextual nuance to leadership studies. The predilection for transformational leadership in public-sector projects (55.6 %) may underline the need to mobilize diverse public stakeholders towards common societal objectives, as well as the influence of political and institutional logics that prioritize public value over efficiency (European Commission, 2025c).

Particularly telling is the strong preference for strategic leadership among hybrid projects (71.4%). Hybrid projects (i.e., those that involve both public and private partners) deal with the most complex stakeholder environments, as indicated by this survey finding that 75 percent of all hybrid project respondents rated stakeholder management as "very" or "extremely" challenging (Table 11). With its focus on alignment around long-term goals and the coordination of stakeholders across systems, strategic leadership seems particularly relevant for these cross-sector spaces where relationships require nurture across lengthy time spans and diverging institutional logics.

Of the leadership types, private-sector projects had significant pluralism (transformational 30.8%, adaptive 30.8%, transactional 15.4%, strategic 15.4%), at least partly reflecting the heterogeneous nature of private-sector ICT projects- ranging from agile software development to one-off infrastructure projects- and their respective leadership demands.

5.3 Discussion of Stakeholder Management Findings

5.3.1 Stakeholder Mapping and Prioritization as Essential Practices

76.7% of the sample felt that stakeholder mapping and prioritization were critical for the eventual success of the ICT in their project shows empirical support for stakeholder theory as it applies to ICT projects (Freeman, 1984; Freeman et al., 2021; Mitchell et al., 1997) This observation corroborates with the works of Aaltonen(2013) and Bourne(2015), who suggested that allocation frameworks towards a systematic stakeholder identification is a fundamental antecedent to manage stakeholders efficiently.
The Stakeholder Salience Model (Mitchell et al., 1997) is preferred over simpler tools such as the Power–Interest Matrix, owing to the complexity of ICT project environments. These three features-power, legitimacy, and urgency-of the salience model are able to capture the multidimensional nature of stakeholder influence in a way that two-dimensional models were not. These conflicts and negotiations are significant in ICT projects

where stakeholders' power can be acquired or lost quickly due to changes in technological, regulatory, or organizational (Floricel et al., 2023; Lehtinen et al., 2019).

5.3.2 Managing Competing Stakeholder Interests as a Central Challenge

Also consistent with this aspect is that a full two-thirds (66.1%) of respondents rated their skill in managing competing stakeholders' interests as "very" or "extremely" challenging, reinforcing the finding that stakeholder conflict is not on the periphery but rather squarely in the center of ICT project leadership. This is in accordance with the findings by Aaltonen and Kujala (2016), who state that end-user representatives can face misunderstandings, disagreement, and coordination difficulties stemming from differences in organizational culture, professional practices, language, and expectations.

The finding that stakeholder complexity scales project size (with 83.3% of large vs 50.0% of small projects reporting very/extremely challenging) offers quantitative support for the hypothesized but infrequently demonstrated relationship between project size and stakeholder complexity. It implies that with the increasing scale of projects comes an exponential increase in Stakeholders, and within stakeholders, as many competing interest groups and conflicts to engage with, which require proportionately more advanced leadership strategies.

Notably, there are also sectoral differences in challenge perception. Hybrid projects reported the greatest levels of challenge (75% very/extremely challenging), followed by private-sector (66.7%) and public-sector (50). This pattern indicates that relationships in cross-sector contexts-among partners with differing institutional logics, accountability mechanisms, and time horizons-produce additional coordination challenges beyond those in single-sector projects.

5.4 Discussion of Leadership Challenges in Complex ICT Settings

5.4.1 Balancing Compliance and Innovation

The evidence that a majority of respondents (51.8%) seek to balance compliance and innovation evenly, while only 10.7% are more inclined toward compliance than innovation, is an important empirical contribution to our understanding of ICT project governance. This insight challenges the binary framing that prevails in both academic and practitioner discourse - one where leaders are forced to choose between innovation and compliance.

In contrast, results support the perspective that effective ICT project leaders must navigate between these priorities simultaneously. It is particularly relevant given emerging EU regulations such as NIS2 and the AI Act. As pointed out in Section 2.1.4, this can be viewed as a limitation to the innovative nature of the AI Act due to high regulation requirements like risk assessment, transparency reporting, and human oversight. However, the findings indicate that practitioners do not see these requirements as tradeoffs but rather as interconnected parts of responsible innovation.

While a minority, the finding that 16.1% favor innovation over compliance is still substantial. This may indicate contexts where first-mover advantage or technological leadership has priority over regulatory risks, or where regulatory frameworks are still developing, and enforcement is uncertain.

5.4.2 Emerging Technologies as Leadership Imperatives

One of the most robust consensus findings in the study is that 83.9% of respondents agree that integrating AI, data analytics, and other emerging technologies is critical for future ICT leadership and governance. This discovery directly addresses the research gap identified in Section 2.5 involving little knowledge about how new digital technologies shape leadership roles and project governance.

Most notably, the determination of AI governance and ethics to be the number one priority area for future research (33.3 percentile of valid responses) stands out in this study results This hypothesis is consistent with the study by Aggarwal (2025) and Kankanhalli et al. (2019), and Zhang et al. (2025), who take an approach that AI introduces new decision-making procedures, data dependencies, automation possibilities and ethical challenges that are transforming power, accountability and stakeholder relationships.

Practitioners seem to understand that AI is not just a technical tool but an agent of change in leadership itself. AI systems can assist in decision-making, facilitate real-time stakeholder analysis, and automate routine governance processes, but they also bring challenges: algorithmic accountability, bias, transparency, and the proper exercise of human judgment. They need to learn not just how to bring AI technology into the world but how to do so with responsibility.

5.4.3 The Need for Ecosystem-Level Research

The result showing that 64.3% are in favor of pursuing multi-organization, EU-wide ICT ecosystems instead of single organizations corresponds directly to the research gap identified with Section 2.5. It has also been criticized for focusing on the level of individual organizations rather than exploring largescale, multi-level information and communication technology (ICT) systems that span across organizational boundaries, sectors, and nations (Martinsuo & Ahola, 2022; Ominde et al., 2025).

This finding indicates that practitioners are aware that ICT projects increasingly cross organizational and national borders. EU-Funded initiatives like Horizon Europe and the Digital Europe Programme are multilateral in nature, comprising consortia bringing together partners across multiple countries with diverse legal systems, cultural settings, and institutional logics (European Commission, 2025a, 2025b, 2025c). Leading in these environments requires capabilities that cannot be learned within the confines of a single organization.

This attention on ecosystem-level research mirrors the increasing role of geopolitical forces in ICT projects. Digital infrastructure and data governance are increasingly being shaped by geopolitical tensions, supply chain security concerns, and digital sovereignty initiatives (World Economic Forum 2025). These macro-level elements need to be considered in leadership research.

5.4.4 Project Phase as a Critical Leadership Factor

As such, the finding that the project phase has been ranked with 21.1% of valid responses as the most important factor that influences leadership effectiveness with stakeholders, provides a degree of empirical support for the argument that leadership must be adaptive to phases (Blockley and Godfrey, 2000). This finding fills the gap mentioned in Section 2.5 and is focused on limited awareness of leadership, stakeholder influence, and governance across the project lifecycle.

In the early stages of a project, leaders may need to adopt transformational leadership in order to develop vision and create unity among diverse stakeholders around common goals. Transactional leadership may play a bigger role during implementation to ensure accountability, compliance, and performance tracking. When an organization is closed, it would require strategic leadership to enable knowledge transition from a closure team to the remaining stakeholders and to ensure that multi-year or even multi-decade long value is realized post-closure.

This is a useful insight for the practice of leadership development and project management training. Leaders must be trained to not only deploy multiple leadership styles but also to diagnose which style fits the respective shooting gallery of the project phase/certain stakeholder context.

5.5 Discussion of Communication, Trust, and Power Management

5.5.1 Communication as Central Leadership Capability

The finding that 94.6 per cent of respondents agree that effective communication is critically important for stakeholders' ICT project success represents the highest degree of agreement across all responses in this whole study. This is consistent with Ochieng and Price (2010) and Lehtinen et al. (2019), who crucially state that communication systems foster an alignment of stakeholders by connecting formal reporting and informal sensemaking.

The role of communication in stakeholders' ICT projects. Its first virtue is that it allows coordination across distributed teams, organizations, and countries. Second, it promotes transparency and accountability - these two principles are crucial for regulation compliance as well as stakeholder trust. Getting in and staying in-staying immersed in the dynamics of the project before you-is why convening is so critical to sensemaking: building shared interpretations of what we're making, what wants we're taking, and what our outcomes will be (Whyte 2019).

In EU ICT projects where several languages and cultures are involved, the role of communication increases (Dsouza, 2025), and leaders need to build communication systems that allow transparency, inclusion, and coordination across silos of organization and nation. This is likely to encompass multilingual project glossaries, culturally sensitive meeting styles, and inclusive practices that allow all stakeholders - such as smaller partnerships and end-users - to find their voice.

5.6 Theoretical Implications

5.6.1 Integration of Strategic Leadership and Stakeholder Theory

The theoretical contribution of this study lumps strategic leadership theory and stakeholder theory empirically in the context of ICT projects. Although these two theoretical

domains have traditionally been studied independently, the results show that they are intertwined in practice. Stakeholder managers - by necessity for strategic leaders in ICT projects. The capacity to identify stakeholders, evaluate power and interests among them, manage competing demands, and build trust is not ancillary to strategic leadership - it is constitutive of it.

Such interaction indicates a necessity for theoretical perspectives that draw attention to the stakeholder aspects of strategic leadership, especially within multi-stakeholder, multi-organization and multinational project settings.

5.6.2 Hybrid Leadership as a Contingency Framework

The clear preference of hybrid leadership models strengthens the support for a contingency approach to ICT project leadership.

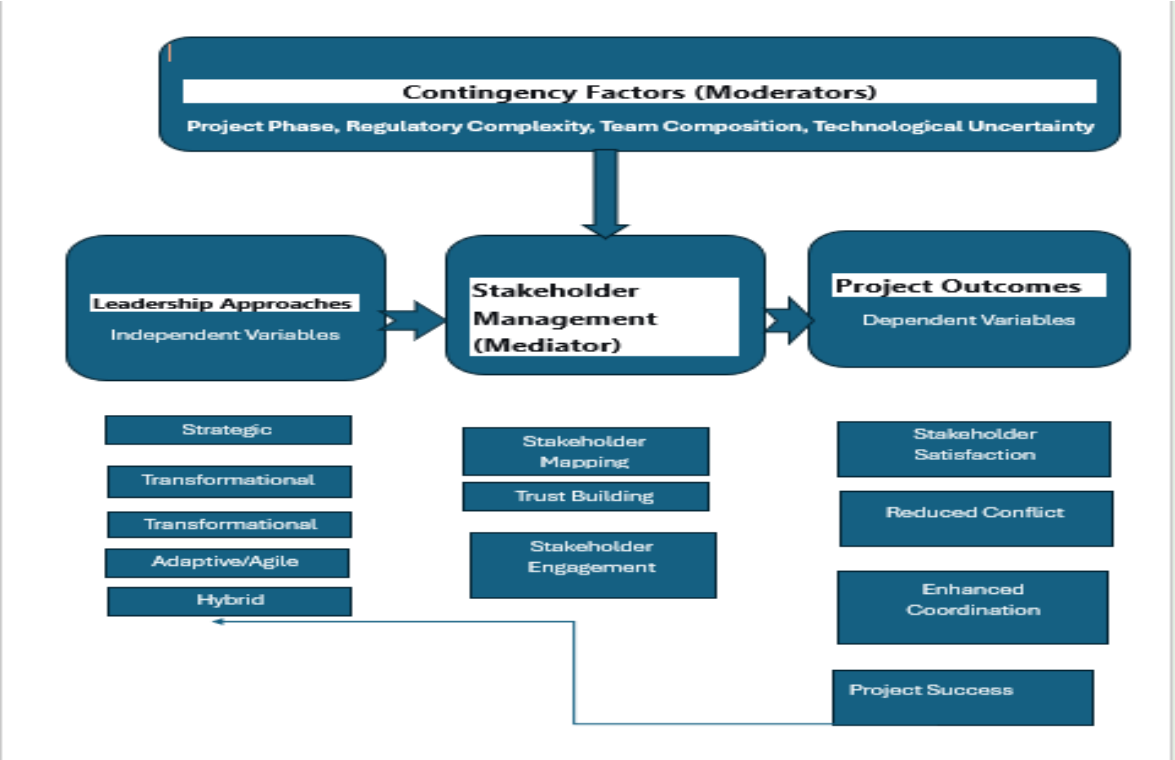


Figure 5. Contingency Framework

Instead of one “best” leadership style, the findings show that skilled leaders use a combination of different traditions depending on project phase, stakeholder context, regulatory environment, and project characteristics.

By identifying particular contingency factors- namely, project phase, regulatory complexity, composition of the team, and technological uncertainty- that alter the effectiveness of varying leadership approaches, this finding expands contingency theory. Future theoretical work should establish more refined models to better understand how these contingency factors reconcile with leadership styles for generating project outcomes.

5.7 Practical Implications

5.7.1 Implications for ICT Project Leaders

This study offers some practical implications for existing and emerging ICT project leaders.

Develop multiple leadership capabilities. Leaders need to develop competencies in transformational, transactional, strategic, and adaptive leadership, as well as teach them when each style is appropriate.

Adopt hybrid governance approaches. Instead of deciding between formal rules and informal trust, leaders need to design hybrid governance models that combine contracts and steering committees with relationship-building and collaboration.

Prioritize stakeholder mapping. Conducting systematic stakeholder identification and prioritization using tools such as the Stakeholder Salience Model should be a standard procedure, not an elective exercise. Build trust through multiple mechanisms. Leaders should not only apply a personal touch in communication but also implement transparent governance mechanisms and manifest compliance with regulations.

Adapt leadership to the project phase. The methods of leadership that bring success during project initiation may prove ineffective in executing or completing a project.

Leaders need to change their style as projects progress. Balance compliance and innovation. If leaders think of regulatory requirements as parameters within which responsible innovation happens instead of treating compliance as a constraint on innovation, more than just its letter.

5.7.2 Implications for Organizations

Organizations sponsoring or delivering ICT projects must:
Invest in leadership development. Training programs need to build hybrid leadership capacities, stakeholder management skills, and regulatory literacy. Support hybrid governance. Instead, organizations must set up governance structures that blend formal mechanisms for accountability with spaces to collaborate, build trust, and solve problems adaptively.

Develop stakeholder management systems. Organizations need to invest in tools and processes that allow for systematic identification, mapping, and engagement of stakeholders. Build regulatory capabilities. With increased regulatory scrutiny from regulations like NIS2 and the AI Act, businesses require regulatory expertise baked into their project leadership.

5.8 Limitations

This study has some limitations that need to be addressed:
Sample size and generalizability. Although 56 responses offer sufficient data for exploratory quantitative analysis, the sample size restricts both statistical power and generalizability. Results need to be verified using larger and more representative samples. Convenience sampling. The use of convenience sampling from professional networks and ICT organizations can introduce selection bias into a qualitative study. The sample may be biased toward individuals who have a vested interest in leadership and stakeholder management.

Self-report data - All data are from self-report surveys, which are subject to social desirability bias, recall error, and common method variance. In future studies, combining multiple sources of data (e.g., true project performance measures, peer ratings, observational approaches) is recommended.

Cross-sectional design - The study captures perceptions at one point in time and cannot show cause or effect or changes over time. However, more longitudinal research is needed to understand the evolution of leadership practices and stakeholder relationships over project lifecycles.

Geographic scope - Although based on a sample that is not restricted to EU respondents, the study does include mentioning EU regulations and projects funded by the EU. Results may not be fully representative of the unique struggles found in cross-border EU information and communication technology initiatives.

Limited qualitative depth - The survey included a few open-ended questions, though there were no interviews or case studies that could have given deeper insight into the mechanism linking leadership practices to stakeholder outcomes.

5.9 Future Research Directions

From the results and limitations presented, some potential avenues for future research are outlined:
Longitudinal studies - ICT Projects should follow from conception until closing to understand how changes of leadership practices, stakeholder relationships, and governance mechanisms occur over time. This would fill the gap that was highlighted in Section 2.5, concerning poorly understood changes across project lifecycles.

Comparative studies across regulatory regimes - More research is needed that compares leadership practices across ICT projects in different regulatory regimes (e.g., EU and non-EU, pre- and post-AI Act implementation), tracing how regulation shapes leadership.

AI and leadership. The integration of AI within the discipline of ICT project management that we advocate in our review will also open avenues for research that examines how AI transforms leadership decision-making, stakeholder management, and governance. AI-enhanced stakeholder mapping, AI-supplemented conversation, and the ethical quality of AI in leadership positions.

Cross-cultural leadership - Migrant leadership refers to the capability to lead in an increasingly globalized world, as with local intercultural networks and marginalized enterprise; research should focus on how cultural differences are accounted for at national, organizational, and professional levels with regard to stakeholder relationships within stakeholder ICT projects.

Hybrid governance mechanisms - Research should explore the mechanisms through which formal and informal governance interact - how trust is established to facilitate compliance, and how, rather than constrain collaboration, formal rules create opportunities for cooperation.

Failed projects - Researchers should study ICT projects that have failed and learn how challenges of leadership failure, stakeholder conflict, and governance breakdown contribute to failed projects. This would go along with the success orientation of most research.

Intervention studies - Conclusive studies need to be conducted on the effectiveness and efficiency of leadership development programs, stakeholder management training(s), and governance interventions in improving ICT aggregate projects.

5.10 Chapter Summary

In this chapter, the empirical findings of the study are discussed and compared to find links with the literature review and theoretical framework. The results show consensus on the importance of strategic leadership for stakeholders' ICT project success, that

transformational leadership is rated as the most favored single approach, and that hybrid or blended forms of leadership are strongly endorsed as more effective than single types. Stakeholder management was validated as a key leadership challenge, with two-thirds of respondents rating competing interests as very or extremely challenging, and in excess for large and hybrid projects. Trust was recognized as an important component of governance that contributes to lowering coordination costs, and communication with the leader or organization, governance mechanisms, and adherence to regulations were seen as key trust-building mechanisms.

AI governance and ethics, adaptive and agile leadership, and stakeholder collaboration were all mentioned as the top research priorities by the study respondents. The significant emphasis placed here on ecosystem-level research in comparison with single-environment studies fills a notable void in the literature.

Such capabilities are particularly important in the context of hybrid leadership, which contributes to adaptive change processes through cross-sector partnerships according to Egan et al. (2019) and emphasizes systematic stakeholder engagement Lindley (2021), a balanced focus on compliance versus innovation, as well as formal and informal governance mechanisms that fit large heterogeneous projects such as these ICT initiatives.

6. Conclusion

6.1 Summary of the Study

The research focused on strategic leadership in managing stakeholders in stakeholder ICT projects. Poor stakeholder management and ineffective leadership have been cited in 30-50% of ICT projects failing or significantly delayed, despite advances in project management methodologies (Standish Group, 2020; Project Management Institute, 2023; Flyvbjerg, 2014), thus driving the motivation for performing this study.

A quantitative survey design was used to obtain data from 56 ICT professionals working in public-sector environments, private-sector environments, and hybrid project environments. This survey looked into leadership practices, stakeholder management methods, and governance mechanisms, as well as the role of communication and trust in stakeholders' ICT projects.

The study aimed to answer four research objectives: (i) what strategic leadership practices can be applied in ICT projects, (ii) how leaders manage relationships among multiple stakeholders within the context of complex ICT projects, (iii) what are some leadership challenges that occur in stakeholders settings within complex ICT environments and (iv) at micro-levels, how do communication, trust and dynamics of power work in terms of stakeholder coordination?

6.2 Key Findings

Objective 1: Strategic Leadership Practices

- 91.1% of respondents agreed that strategic leadership positively impacts Stakeholder ICT project success
- The single most preferred approach is transformational leadership (35.7%), with a second at strategic and adaptive/agile (19.6% each)
- 80.3% believe hybrid leadership models are more effective than single styles

- Transformation leadership favors public-sector projects (55.6%) · Strategic leadership favor hybrid projects (71.4%)
- Project phase: The most important factor impacting leadership effectiveness with stakeholders

Objective 2: Stakeholder Management

- 76.7% of people believe that stakeholder mapping and prioritization are key to ensuring a project can be successful
- 66.1% say managing competing stakeholder interests is extremely challenging
- The number of stakeholders adds complexity to the project and scales with its size: 83.3% of large projects indicated very/extremely challenging
- 91.0% believe trust lowers coordination costs and makes collaboration easier
- Goal 3: Leadership Barriers in Complex ICT Contexts
- 51.8% prefer equal balance of compliance and innovation; only 10.7% prefer compliance over innovation
- 83.9% believe integration of AI, data analytics, and other emerging technologies is essential for future ICT leadership
- AI governance and ethics ranked as the top 1 priority for future research areas (33.3%)
- 64.3% support concentrating research on EU-wide ICT ecosystems rather than single organizations

Objective 4: Communication, Trust, and Power

- 94.6% believe communication among multi-stakeholders is vital for ICT project success
- Leadership communications, governance structures, and compliance with regulations are the main trust drivers

6.3 Theoretical Contributions

A theory of strategic leadership and stakeholder integration. The study empirically shows that strategic leadership and stakeholder management in the ICT project environment are inseparable, highlighting a need for formalized theoretical models that directly integrate the stakeholder-related aspects of strategic leadership.

Empirical support for hybrid leadership - Robust support for hybrid models of leadership offers empirical evidence for contingency perspectives on leadership and implies that successful leaders should be drawn from multiple traditions depending upon contextual influences.

Trust as hybrid governance - We show that trust and formal governance are complements rather than substitutes, contradicting theoretical arguments that state that trust can substitute for formal rules, thus supporting a hybrid governance perspective.

Identification of contingency factors identifies project phase, regulatory complexity, team composition, and technological uncertainty as four key contingency factors that moderate the effectiveness of leadership.

Ecosystem-level perspective - With ecosystem-level research receiving more attention than single-organization studies, this finding supports the literature for increased focus on multi-level, cross-border experience of ICT systems.

6.4 Practical Contributions

The study provides practical recommendations for leaders of ICT projects, organizations, and policymakers:

- Leaders, you need to: Create diverse areas of leadership capability; shift into more hybrid governance structures; strategically map out the stakeholders in

your organization on a deep level over time; communicate, govern and comply to build trust in your teams, organizations and ecosystems; lead for the phase of a project, not just based around title/position/authority leveraging differences & balance compliance with innovation.

- ❖ For organizations: Invest in leadership development; support hybrid governance; develop systems of stakeholder management; build regulatory capabilities.
- ❖ For policy makers: Create regulations that enable, not constrain, innovation; glue for regulatory sandboxes; buy in to the role of leadership in compliance.

6.5 Limitations and Future Research

Limitations of the study include sample size, convenience sampling, self-report data, cross-sectional design, and geographic scope. Future research directions include longitudinal studies, comparative studies across regulatory regimes (i.e., ERC control mechanisms), investigating AI and leadership, cross-cultural research, hybrid governance mechanisms studies, failed projects analysis, and intervention studies measuring the effectiveness of developing (good) leadership skills.

6.6 Concluding Remarks

Overall, strategic leadership plays an important role in the success of ICT projects with multiple stakeholders. According to the study, effective leaders do not resort to a single leadership tradition; they adapt transformational, transactional, strategic, and adaptive approaches to the project stage, the situation between stakeholders, and the regulatory plan.

Stakeholder management is not an appendix to ICT project leadership but one of its constituents. On the contrary, those who succeed are distinguished by elements of stakeholder identification, awareness of their power and interests, and striking a balance between conflicting demands in such a way that creates trust and propels things along.

This also presents obstacles that will be used as propelling factors in the development of ICT project leadership in the foreseeable future. It cannot be disputed that AI, as well as more recent technologies, are significantly changing processes of leadership, decision-making, and governance. Innovation is required with compliance pressures being on regulatory frameworks such as NIS2 and the AI Act. ICT cross-border projects bring about additional complexities due to geopolitical factors.

Among these changes, the executives who have an opportunity to emerge successful will be the ones capable of dealing with complexity: exchanging demands, developing trust across divergent stakeholder groups, and flexing their playbooks as the projects change. Leadership, in the context of stakeholders' ICT projects, involves not a single approach but a flexible hybrid one that adapts to the stage of the project, stakeholder setup, and regulatory environment. They will appreciate that, in stakeholders' ICT ventures, leadership is coordination, cooperation, and value delivery to all stakeholders, rather than that of the leadership.

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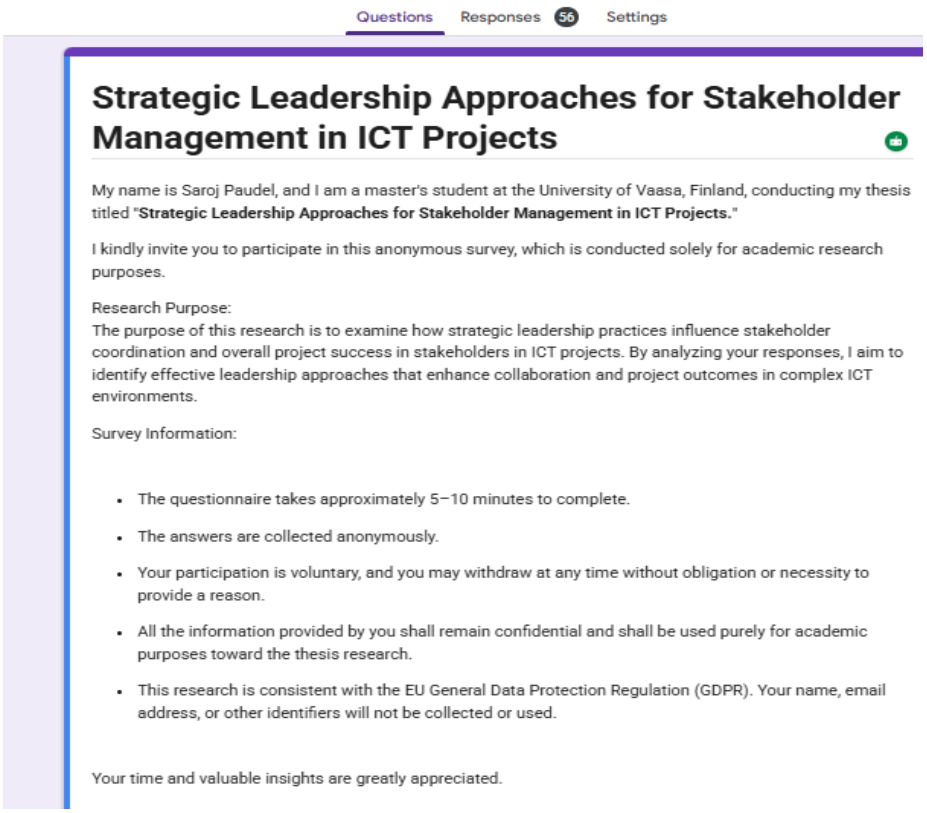
Appendix 1. Survey questionnaire



Questions Responses 56 Settings

Strategic Leadership Approaches for Stakeholder Management in ICT Projects

My name is Saroj Paudel, and I am a master's student at the University of Vaasa, Finland, conducting my thesis titled "**Strategic Leadership Approaches for Stakeholder Management in ICT Projects.**"

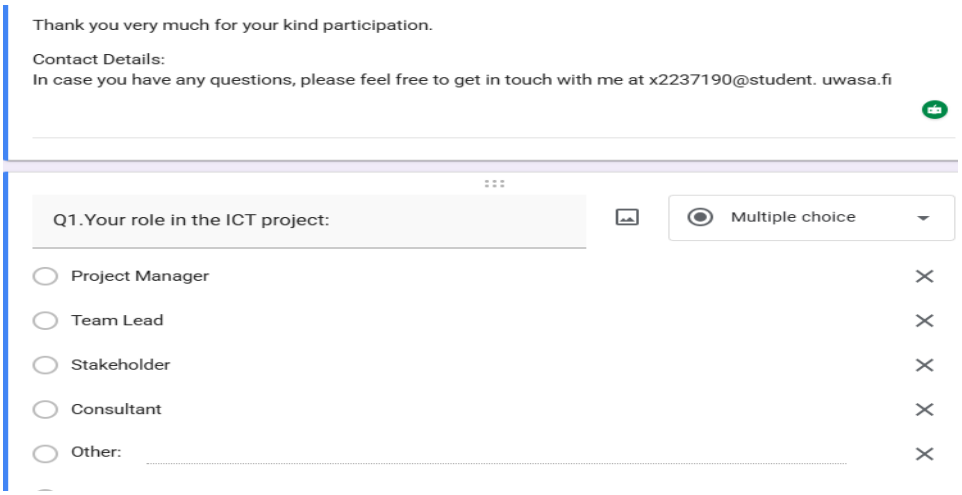
I kindly invite you to participate in this anonymous survey, which is conducted solely for academic research purposes.

Research Purpose:
The purpose of this research is to examine how strategic leadership practices influence stakeholder coordination and overall project success in stakeholders in ICT projects. By analyzing your responses, I aim to identify effective leadership approaches that enhance collaboration and project outcomes in complex ICT environments.

Survey Information:

- The questionnaire takes approximately 5–10 minutes to complete.
- The answers are collected anonymously.
- Your participation is voluntary, and you may withdraw at any time without obligation or necessity to provide a reason.
- All the information provided by you shall remain confidential and shall be used purely for academic purposes toward the thesis research.
- This research is consistent with the EU General Data Protection Regulation (GDPR). Your name, email address, or other identifiers will not be collected or used.

Your time and valuable insights are greatly appreciated.



Thank you very much for your kind participation.

Contact Details:
In case you have any questions, please feel free to get in touch with me at x2237190@student. uwasa.fi

Q1.Your role in the ICT project: Multiple choice

- Project Manager
- Team Lead
- Stakeholder
- Consultant
- Other:

Q2. Project size:

- ◯ Small (<5 people)
- ◯ Medium (5–20 people)
- ◯ Large (>20 people)
- ◯ Other

Q3. Strategic leadership positively influences the success of ICT projects involving multiple stakeholders.

- ◯ Strongly agree
- ◯ Agree
- ◯ Neutral
- ◯ Disagree
- ◯ Strongly disagree

Q4. Which leadership approaches are most effective in multi-stakeholder ICT projects?

- ◯ Transformational (vision, innovation, motivation)
- ◯ Transactional (control, accountability, performance-based)
- ◯ Adaptive/Agile (flexibility, iterative learning)
- ◯ Strategic (long-term alignment, stakeholder co-ordinations)
- ◯ Other: .....

Q5. In highly regulated ICT projects, leaders should prioritize:

- ○ Innovation over compliance
- ○ Compliance over innovation
- ○ Balance both equally
- ○ Not sure

Q6. Strategic leaders' ability to integrate technical expertise with stakeholder management is critical for project outcomes.

- ○ Strongly agree
- ○ Agree
- ○ Neutral
- ○ Disagree
- ○ Strongly disagree

Q7. Transformational leadership improves team performance and innovation in ICT projects.

- ○ Strongly agree
- ○ Agree
- ○ Neutral
- ○ Disagree
- ○ Strongly disagree

Q8. Transactional leadership ensures accountability and regulatory compliance in ICT projects.

- Strongly agree
- Agree
- Neutral
- Disagree
- Strongly disagree

Q9. A hybrid leadership model (combining transformational and transactional approaches, agile) is more effective than a single style.

- Strongly agree
- Agree
- Neutral
- Disagree
- Strongly disagree

Q10. Stakeholder mapping and prioritization are essential for project success.

- Strongly agree
- Agree
- Neutral
- Disagree
- Strongly disagree

Q11. Effective communication is critical for success in multi-stakeholder ICT projects.

- Strongly agree
- Agree
- Neutral
- Disagree
- Strongly disagree

Q12. Trust reduces coordination costs and facilitates collaboration in multi-stakeholder ICT projects.

- Strongly agree
- Agree
- Neutral
- Disagree
- Strongly disagree

Q13. Integrating AI, data analytics, and emerging technologies is critical for future ICT leadership and governance.

- Strongly agree
- Agree
- Neutral
- Disagree
- Strongly disagree

Q14. Managing competing stakeholder interests is a major challenge in ICT projects.

- ○ Extremely challenging
- ○ Very challenging
- ○ Moderately challenging
- ○ Slightly challenging
- ○ Not challenging

Q15. Which areas should be prioritized in future ICT leadership research?

- ○ AI governance and ethics
- ○ Adaptive and agile leadership
- ○ Multi-stakeholder collaboration
- ○ Regulatory compliance and digital sovereignty
- ○ Trust-building and communication in virtual teams

Q16. If you have any ideas, suggestions, or insights regarding my thesis or survey.

Short-answer text