Navigating Governance Processes in IT Startups: A Case Study within an Original Equipment Manufacturer (OEM)

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Abstract

This qualitative study explores the intricate aspects of governance procedures within agile software development teams in IT startups in Original Equipment Manufacturers (OEM's) environment in South Africa. The research aimed to gain a comprehensive understanding of how elements such as leadership styles, organizational culture, decision-making processes, team climate, and emotional aspects of leadership influence the navigation and effectiveness of governance in agile agile software development teams.

A case study of an IT startup within an OEM was used to explore the research question. To answer this question, an investigation was conducted through interviews of a qualitative nature with 20 members of agile teams in the organization selected for the case study seeking to: (i) To examine the current governance practices employed by agile teams of software development organizations within an OEM environment in South Africa; (ii) To identify the key challenges and opportunities faced by software development organizations in implementing effective governance practices; and (iii) To recommend best practices and strategies for enhancing governance practices in software development organizations, based on the findings of the case studies and an analysis of industry trends and standards.

The results indicate the necessity of adaptive leadership that balances transformational, transactional, and laissez-faire styles to effectively manage governance of agile software development teams; the importance of aligning governance frameworks with organizational cultures, fostering continuous improvement, and promoting effective communication; the challenges in role clarity and the impacts of missing team members on workload, job satisfaction, and project outcomes; and that culturally sensitive governance practices, supported by regular knowledge-sharing sessions and a culture of measured risk-taking, enhance team performance and innovation. Thus the recommendations include implementing adaptive leadership training, fostering a culture of continuous feedback, and enhancing risk management practices to ensure project stability and quality. This study contributes to understanding how governance processes can be tailored to support agile methodologies in complex organizational settings.

Keywords: Governance, Software development organization, Scrum software development, Structural Contingencies, Decision-making process, Leadership style

Contents

Table of Figures

Table of Tables

Chapter 1. Introduction

1.1 Introduction

In today's rapidly evolving business landscape, software development organizations are increasingly turning to agile methodologies to improve their responsiveness to change and deliver value to customers more efficiently (Al-Saqqa et al, 2020). Agile methodologies emphasize iterative development, collaboration, and flexibility, enabling teams to adapt to changing requirements and deliver high-quality software products (Mehta & Sood, 2023).

While agile methodologies have been widely adopted, the governance of agile software development teams remains a challenge for many organizations (Lehto & Rautiainen, 2009). Governance refers to the framework of rules, practices, and processes that guide decision-making and ensure organizational accountability (Abbas, 2009; Luna et al, 2014;Talby & Dubinsky, 2009). In the context of agile teams, governance practices need to strike a balance between providing enough structure to ensure project success and allowing teams the autonomy to innovate and respond to change (Moe et al, 2021). An agile software development team is a cohesive collection of individuals collaborating to deliver software solutions by employing agile approaches (Skelton & Pais., 2019). These teams often comprise individuals with diverse skills and functions, such as developers, testers, designers, and product owners, making them cross-functional (Skelton & Pais, 2019).

Effective governance of agile teams is crucial for managing risks by facilitating clear communication, accurate measurement, and efficient management (Vlietland & Vlief, 2014). This enables firms to identify and prioritize risks, allocate resources appropriately, and ensure compliance (Vlietland & Vlief, 2014). The opportunity provided allows for establishing unambiguous chains of duty, authority, and communication, enabling individuals to effectively carry out their tasks and enhancing team effectiveness (Bannerman, 2009; Chulani at al., 2008; Vlietland & Vlief, 2014). Additionally, it facilitates the synchronization of business and software development endeavors, guaranteeing that the results fulfill strategic prerequisites and yield a return on investment (Bannerman, 2009). The governance of agile teams enhances flexibility and agility, enabling firms to utilize global resources and make agile development decisions with greater effectiveness (Chulani et al., 2008; Vlietland & Vlief, 2014). The governance implements measurement and control systems to oversee and regulate effort,

quality, expenses, and other variables, facilitating control and future planning (Vlietland & Vlief, 2014). Governance is intricately linked to management and processes since it involves allocating decision-making authority, establishing measurement and control procedures, and implementing efficient processes to accomplish objectives (Bannerman, 2009; Chulani et al., 2008; Vlietland & Vlief, 2014).

The governance of agile teams is particularly complex due to the dynamic nature of agile development and the diverse factors that influence team dynamics and performance (Manjavacas et al., 2020). Contextual factors, such as organizational culture and industry regulations, can impact governance practices, as can structural contingencies, such as team size and composition (Gregory et al., 2016; Kruchten, 2013). Additionally, decision-making processes and leadership styles within agile teams play a crucial role in shaping governance practices (Uludag et al., 2018).

Despite the importance of governance in agile software development, there is a lack of comprehensive research that addresses the specific challenges and best practices associated with governing agile teams. Existing literature often focuses on either agile methodologies or governance practices in isolation, overlooking the nuanced interactions between these two areas.

This study seeks to fill this gap by investigating the governance practices in agile software development teams within software development organizations in South Africa. Using the conceptual lenses provided by contingency theory, the study aims to explore how contextual factors, structural contingencies, decision-making processes, and leadership style influence governance practices in agile teams (Fiedler, 2015). By gaining a deeper understanding of these dynamics, organizations can improve their governance practices and enhance the performance of their agile teams (Khazanchi, 2005).

1.2 Context of the study

The current state of the governance framework for agile software development teams in IT startup firms operating in South Africa is marked by a transition towards more flexible and adaptable approaches in contrast to traditional governance models (Vanker, 2015). Startups commonly employ Agile approaches, such as Scrum and Kanban, to improve software development flexibility, reactivity, and collaboration (Norman, 2021). These approaches

emphasize developing software in small, repeated steps, receiving ongoing feedback, and delivering software features gradually (Norman, 2021; Vanker, 2015). This approach is well-suited for startups due to their fast-paced and ever-changing nature (Norman, 2021).

South African companies frequently utilize frameworks that encourage self-organization and autonomy regarding governance in agile software development teams (Moyo, 2021). This strategy enables teams to autonomously determine their work processes, tools, and priorities, cultivating a sense of ownership and responsibility among team members (Mwakawamfwa, 2023). The governance procedures in agile teams primarily emphasize offering direction and assistance rather than imposing strict control (Moyo, 2021; Mwakawamfwa, 2023; Norman, 2021). This approach enables teams to adjust more effectively to evolving requirements and market conditions (Norman, 2021).

Nevertheless, there are obstacles to overcome when applying agile governance frameworks in South African startup contexts (Khoza & Marnewick, 2021). These problems include maintaining a harmonious equilibrium between autonomy and adherence to organizational objectives, guaranteeing consistent communication and collaboration among team members, and integrating agile principles with pre-existing governance structures (Khoza & Marnewick, 2021; Shongwe, 2017). In addition, the rapid pace of startups can occasionally result in insufficient paperwork and formal procedures, which might provide difficulties in compliance and risk mitigation (Shongwe, 2017).

These organizations operate in a rapidly evolving industry characterized by technological advancements, changing customer demands, and increasing competition. As such, their internal governance practices play a crucial role in ensuring operational efficiency, risk management, and compliance with regulatory requirements (Teffo et al., 2023).

One key aspect of the internal governance landscape for software development organizations in South Africa is managing a diverse and multicultural workforce. South Africa's workforce is highly diverse, with employees from different cultural backgrounds and with varying levels of skills and experience (Kanotsauka & Khoza, 2023). Effective governance practices in this context involve promoting diversity and inclusion, providing training and development opportunities, and fostering a culture of collaboration and innovation.

Another important aspect of the internal governance landscape is the need to manage risks associated with software development projects. Software development projects are inherently complex and can be prone to cost overruns, delays, and quality issues (Majerowicz & Shinn, 2016). Effective governance practices in this context involve implementing robust project management processes, conducting regular risk assessments, and ensuring clear communication and collaboration among agile teams (Carl, 2016; Ylinen, 2021).

The software organization within which the study is conducted can be described as an organization with nationally distributed team members that employs agile methodology and is distinguished by a dynamic and collaborative approach to software development. This organization is made up of teams from several geographic areas within South Africa, providing a wide pool of talent and expertise to contribute to projects. The agile technique strengthens this collaborative atmosphere by emphasizing iterative development, frequent communication, and adaptation to change (Kadenic et al. , 2023; Sassa et al. , 2023).

In this organization, team members interact in virtual teams, using communication tools and technologies to communicate productively despite being physically separated. Daily stand-up meetings, which are sometimes held electronically, keep team members on track and informed about project progress, obstacles, and forthcoming responsibilities. This technique enables teams to respond fast to changes in requirements by promptly adjusting their priorities and emphasis areas.

The agile methodology also emphasizes customer communication, with teams meeting with stakeholders regularly to receive input and ensure that the software being produced fulfills their needs (Kadenic et al., 2023). The business stakeholders are based in South Africa, Europe, China, and America. This customer-centric approach ensures that the software supplied is technically solid, tackles real-world issues, and adds value to end users (Verwijs & Russo, 2023).

1.3 Research Problem

Despite the importance of governance in software development organizations, a dearth of extensive scholarly investigations exists about governance systems that are specifically designed to suit the unique circumstances of an Original Equipment Manufacturer (OEM) (Barnes & Morris, 2008). The original equipment manufacturer (OEM) setting has distinct

obstacles, such as intricate stakeholder connections, reconciling internal objectives with external customer expectations, and guaranteeing congruence between internal OEM procedures and external customer prerequisites ((Barnes & Morris, 2008; Börzel & Thauer, 2013; Pederit et al., 2011). However, this is well-studied (Börzel & Thauer, 2013; Pederit et al., 2011). Thus, this study focuses on the IT startup company formed inside an OEM, not the OEM itself. In general settings, the governance structures set up for the OEM should be easily propagated to the startup that forms in it; in the cases that the startup is fundamentally different from the OEM, a set of separate governance structures and processes is necessary. As is in the case of an IT startup company inside an OEM, it must navigate its own governance structures and processes because they are not implied in those of an OEM, and those of the OEM cannot be readily implemented in the startup as they are fundamentally different in their operations and structures.

The current body of literature offers valuable insights into the governance practices seen in software development organizations. Bannerman (2009) explored the implementation of software development governance to establish effective organization and operational structures, formulate principles and concepts that can be utilized in software development governance, and offer a comprehensive understanding of governance within the context of software development. Chulani et al. (2014) discussed software development governance to explain how it relates to management and corresponding processes. Vlietland and Vliet (2008) investigated the challenges of having multiple teams propose a governance framework.

However, a research gap exists in comprehensively examining governance difficulties encountered by software development organizations functioning within an OEM. Hence, it is imperative to conduct research that examines the governance techniques employed by software development firms operating within an OEM framework with a focus on agile teams, to offer valuable insights for both practitioners and researchers. It reveals how governance processes can be integrated with agile practices to ensure compliance and control without stifling agility. Through discovered strategies and frameworks for integrating governance into agile practices effectively.

1.4 Purpose of the study

This study aims ***to investigate governance practices used by software development organizations in their agile teams, with a specific focus of an OEM environment.*** The study

seeks to examine ***the development, implementation, and management of governance practices*** within the organization, as well as ***their influence on organizational performance and stakeholder relationships.*** Through thorough case studies, the research aims ***to discover effective strategies, obstacles, and opportunities for enhancing governance practices*** in software development organizations' agile teams**.** The study's goal is to ***offer valuable insights that can guide the creation and execution of efficient governance frameworks*** in agile teams of software development organizations.

1.5 Research Objectives

The research objective is organized around three sub-objectives, as outlined subsequently.

1.5.1 Sub-objective 1

To examine the current governance practices employed by agile teams of software development organizations within an OEM environment in South Africa, focusing on aspects such as decision-making processes, team climate, emotional aspects of leadership, and team interactions.

1.5.2 Sub-objective 2

To identify the key challenges and opportunities faced by software development organizations in implementing effective governance practices, considering factors such as leadership styles and organizational culture.

1.5.3 Sub-objective 3

To recommend best practices and strategies for enhancing governance practices in software development organizations, based on the findings of the case studies and an analysis of industry trends and standards.

1.6 Justification of the Study

The rationale for this study stems from the notable deficiency in the current body of research about governance procedures in software development firms that operate within an OEM setting. Although there is a substantial amount of study on governance in software development firms, there is a noticeable absence of specific attention given to the distinct issues and dynamics that exist inside an OEM context. The OEM environment presents various challenges, including the need to manage internal objectives in conjunction with external

customer expectations, navigate complicated stakeholder relationships, and ensure alignment with both internal OEM processes and external customer requirements. The analysis of these specific difficulties is of utmost importance for the success and long-term viability of software development businesses operating within an OEM environment.

Software development businesses can optimize their project outcomes, strengthen stakeholder relationships, and ultimately raise their competitiveness by recognizing and comprehending the governance methods that are effective in an OEM setting. The results of this study will provide valuable insights for professionals, enabling them to formulate and execute governance processes that are specifically designed to address the distinct difficulties encountered when functioning within an OEM. This study has the potential to offer significant insights to policymakers and consultants operating inside the software development business, enabling them to navigate governance approaches that can effectively contribute to the achievement of organizational success.

This paper makes a theoretical contribution to the existing body of knowledge on governance within agile teams in software development organizations. By concentrating on the circumstances of an OEM, the research might enhance current governance theories and frameworks, offering a more profound and subtle comprehension of how governance functions in diverse organizational environments. This phenomenon has the potential to facilitate the creation of governance models that are more efficient and applicable in various industries and organizational settings, hence contributing to the advancement of governance research.

1.7 Delimitations of the Study

This study's scope is limited to examining governance procedures inside software development firms that operate within an OEM configuration employing an agile software development approach.

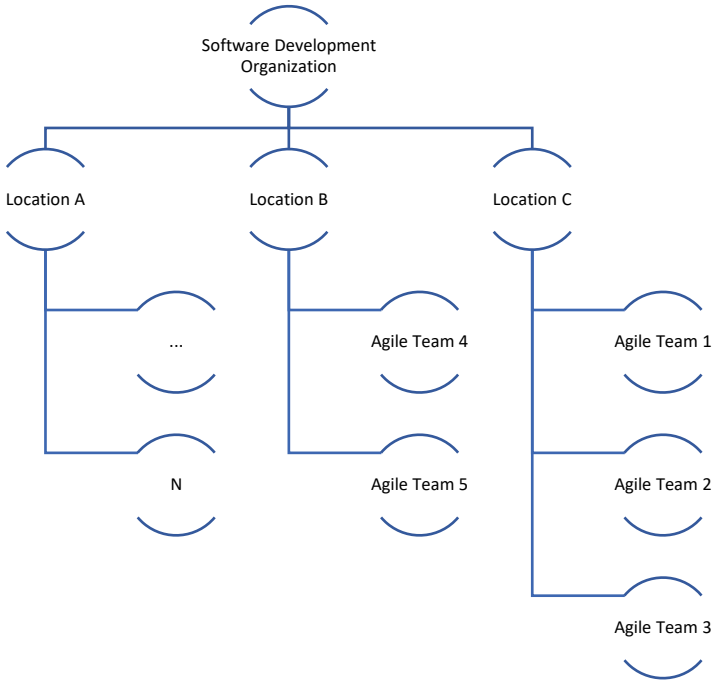

Figure 1: Agile team setup in the Software Development Organization case study

Diagram in *Figure 1: Agile team setup in the Software Development Organization case study* Outlines the current agile team structure. Ideally, the organization would like to govern the teams centrally. However, the distinct differences in the project types and product types per region and per agile team make this a challenge. Thus, the resolution is to look at how to govern each agile team, then roll up to types of projects and products, and then regionally. Thus, the investigation of how to navigate governance will be **delimited to the governance of agile teams**.

This approach enables a more thorough investigation of the difficulties and strategies that are pertinent to agile teams in the software development organization. The investigation will be delimited to four lenses adopted from contingency theory; namely, contextual factors, structural contingencies, decision-making processes, and leadership styles (Fiedler, 2015). The *contextual lens* will assess how project size and organizational culture influence governance practices (Fiedler, 2015). The *structural contingencies lens* assesses how structural aspects such as team composition, roles, and channels affect agile teams' governance mechanisms (Fiedler, 2015). The *decision-making process lens* focuses on the decision-making processes within agile teams and how they are influenced by external and internal factors, such as project complexity or stakeholder expectations (Fiedler, 2015). Moreover, the *leadership style lens assesses* how different leadership styles are employed in agile teams to facilitate governance and achieve project goals (Fiedler, 2015).

1.8 Operational Definitions

The following operational definitions are adopted in the context of navigating governance processes in IT Startups.

1.8.1 Governance

Governance within the framework of a software development organization comprises the policies, procedures, and practices that establish the parameters for the management, direction, and control of software development activities (Kjaer, 2023). It comprises the regulations and principles that dictate the course of action, institute systems of responsibility, and guarantee adherence to pertinent standards and laws (Alreemy et al. , 2016; Kjaer, 2023). In the context of software development, it entails defining processes for risk management and conflict resolution, establishing clear roles and responsibilities for teams and individuals involved in software development, and ensuring that software development activities are carried out ethically and by legal and regulatory standards (El Khatib et al., 2020). Governance is enforced within software development organizations via a range of mechanisms, such as project management methodologies, quality assurance procedures, and management and stakeholder supervision (Muller, 2017).

Monitoring and evaluating software development projects to identify areas for improvement and ensure that lessons learned are applied to future endeavors are additional facets of governance (Wareham et al., 2014). Ensuring that software development projects are delivered on time, within budget, and according to the organization's quality standards, governance is indispensable (Joslin & Müller, 2016b).

1.8.2 Software development organization

An organization or company that specializes in the creation, design, development, and maintenance of software products or solutions is known as a software development organization (Khalil & Khalil, 2020). Typically, these entities are comprised of software development, engineering, testing, and project management teams working together to create software that satisfies specific criteria and goals (Khalil & Khalil, 2020).

Organizations specializing in software development can range in size and composition from modest fledgling ventures to expansive multinational conglomerates (Lindskog & Magnusson,

2021). They can conduct business in numerous sectors, including education, healthcare, finance, and technology (Khalil & Khalil, 2020; Lindskog, C., & Magnusson, 2021).

1.8.3 Scrum software development

Scrum, an extensively implemented framework for agile software development, places significant emphasis on collaboration, flexibility, and iterative progress (Wright, 2020). Scrum enables teams to decompose complex projects into smaller, more feasible tasks, which are then accomplished through sprints, which are brief iterations (Wright, 2020). The team dedicates one to four weeks to each sprint, during which time they concentrate on delivering a product increment that has the potential to be shipped (Wright, 2020). This iterative methodology enables teams to rapidly adjust to shifting priorities and requirements, thereby delivering value to clients frequently and early (Wright, 2020).

The success of Scrum is predicated on the notion of cross-functional, self-organizing teams. It is the responsibility of these teams to devise methods for completing the tasks at hand, in the absence of explicit directives from outside sources (Ashmore et al, 2014). This autonomy enables groups to assume responsibility for their tasks and work together efficiently to accomplish their objectives (Ashmore et al, 2014). Additionally, Scrum teams are supported by critical roles, such as the Product Owner, who advocates for stakeholders' interests and ensures the prioritization of the product backlog, and the Scrum Master, who facilitates the Scrum process and eliminates obstacles (Ashmore et al, 2014).

The Scrum framework is predicated on its ceremonies, which furnish the development process with organization and synchronicity (Wlodarczak, 2023). For instance, the Daily Stand-up is a concise gathering that takes place daily to ensure that the team remains unified and concentrated on the sprint objective (Wlodarczak, 2023). Conducting the Sprint Review after every sprint enables the team to showcase the accomplished work and collect input from relevant parties (Wlodarczak, 2023). After each sprint, the Sprint Retrospective affords the team a chance to assess their methodology and pinpoint potential avenues for enhancement (Wlodarczak, 2023).

1.8.4 Structural Contingencies

Structural contingencies pertain to an organization's infrastructure configurations that depend on many elements, including its scale, intricacy, and surroundings (Donaldson, 2015; Fiedler,

2015; Pennings, 1975). Structural contingencies in agile software development teams may include the distribution and size of the team, in addition to the assignment of roles and responsibilities, in the context of governance (Ermakoff, 2015). The design and implementation of governance mechanisms within agile teams may be influenced by these structural factors, which may affect the way decisions are reached, work is structured, and communication is managed (Oc, 2018). In order to guarantee that governance practices are congruent with the requirements and dynamics of the team, the comprehension and management of structural contingencies are necessary (Neubert et al., 2016; Shao et al., 2016).

1.8.5 Decision-making process

A series of steps that individuals or groups traverse to identify, evaluate, and select among alternative courses of action to accomplish a particular objective is referred to as the decision-making process (Garcia et al., 2022; Khanagha et al., 2020; Vajdi & Abbass, 2015; Yu & Petter, 2014). The decision-making process within agile software development teams pertains to governance (Garcia et al., 2022). It encompasses identifying and prioritizing tasks, allocating resources, and resolving conflicts or issues that may emerge throughout the development phase (Khanagha et al., 2020; Yu & Petter, 2014). In agile teams, the decision-making process is commonly distinguished by its collaborative and iterative characteristics (Khanagha et al., 2020; Yu & Petter, 2014). Team members engage in joint efforts to reach decisions swiftly and flexibly considering evolving circumstances or requirements (Vajdi & Abbass, 2015).

1.8.6 Leadership style

How a leader motivates team members to accomplish organizational objectives, executes strategies, and offers guidance is referred to as leadership style (Fischer & Charef, 2021; Modi & Strode, 2020). The governance implementation of agile software development teams is influenced by various leadership approaches (Neubert et al., 2016; Shao et al., 2016). An instance of this can be seen in the implementation of more innovative governance practices because of the emphasis of a transformational leadership style on inspiring and motivating team members to perform at their highest level (Greineder & Leicht, 2020). Conversely, a directive leadership style entails the strict enforcement of governance practices through the provision of explicit instructions and close supervision of team members (Akkaya & Üstgörül, 2020). A comprehensive comprehension of leadership styles is critical for the efficient administration of affairs, as it enables leaders to customize their methodology to the requirements and intricacies

of the group, thus augmenting team productivity and project results (Neubert et al., 2016; Shao et al., 2016).

1.9 Structure of the Paper

Chapter 1 of this report outlines the background and introduction of the research, contextualizing it. This section includes the research problem, research objectives, justification of the research, and its delimitation.

Chapter 2 will follow a detailed critical literature review to affirm the identified research gaps and justification. The contingency theory, which constitutes the theoretical framework, will be explored in the literature review. The theoretical framework will then inform the research methodology which will be outlined.

Chapter 3 outlines the research process followed based on the research methodology. The research approach and design presentation clearly articulate the method used to collect data, the research population, the sample, and the research instruments.

Chapter 4 outlines the research results and the corresponding interpretation, encompassing the artifacts generated through the research instruments, such as participants' responses. Chapter 5 compares the findings with existing literature to present new findings, similarities, and differences.

Chapter 6 presents the conclusion in line with the research findings. Based on the research outcome, any accidental discovery outside the scope of the research study will be presented along with potential future research that can contribute to the understanding of how to navigate governance processes in agile software development teams in an IT Start-up embedded in an OEM.

Chapter 2. Literature Review

2.1 Introduction

The literature review chapter provides the conceptual basis for the investigation into the navigation of the governance process in an IT Startup within an OEM, narrowing the focus on governing agile software development teams. This section examines previous academic literature, research studies, and industrial knowledge that have explored similar topics. Examining the academic and practical aspects, the aim is to thoroughly comprehend the fundamental ideas, approaches, and discoveries that have influenced conversations around governing agile software development teams and their impact on operational effectiveness. The scope of the study includes a wide range of pertinent subjects, such as governance practices, contextual factors, structural contingencies, decision-making processes, and leadership styles in agile software development. This literature review will guide the research strategy and methods and establish the foundation for identifying deficiencies, patterns, and places where the study will provide innovative perspectives to the discussion on governance of agile software development teams in IT startup companies embedded within an OEM.

The literature review has two primary objectives. The first is the empirical review, which aims to establish the empirical evidence reported in the literature relevant to the study's topic. The empirical analysis aims to identify research gaps, leading to the investigation of the governance of agile software development teams**.** The second component of the literature review centered on the development of a conceptual framework that served as the theoretical lens for this investigation. The constituents of the literature review are the exploration of the concepts around the governance of agile software development in IT startup companies embedded within an OEM**.** After that the benefits and challenges thereof are synthesized.

A systematic literature review is then outlined to answer the following review question: "***What are the governance techniques employed by IT startup companies operating within an original equipment manufacturer (OEM), with a focus on governing agile development teams?"*** The review aims to identify the research gaps from the contingency theory perspective.

2.2 Concepts of the study

This study delves into the *governance of agile software development teams* within IT startup companies, providing a thorough exploration *of key concepts* essential for understanding and improving governance practices in this context (Khalil & Khalil, 2020). *Contextual factors* provide the essential framework for the development and implementation of governance strategies (Shao et al., 2016). These factors include a range of internal and external elements, such as the culture within the *organization, industry standards, regulations, and ever-changing market conditions* (Shao et al., 2016). Having a clear grasp of these contextual factors is crucial because they have a significant impact on the way governance is carried out, the way decisions are made, the dynamics of leadership, and the overall functioning of teams in IT startup companies (Fischer & Charef, 2021; Modi & Strode, 2020).

Another crucial concept in the study is an exploration of *structural contingencies*, which are influenced by factors such as the *organizational structure, size, and distribution of agile teams* (Donaldson, 2015; Fiedler, 2015; Pennings, 1975). For large organizations with teams spread out across different locations, it may be necessary to adopt decentralized governance frameworks that can cater to various decision-making requirements and local operational needs (Ghani et al., 2019). On the other hand, smaller organizations that have teams working together in the same location may discover that centralized governance structures are more efficient in maintaining consistency, coordination, and alignment throughout the organization (Ghani et al., 2019). These structural factors have a significant influence on how governance mechanisms are designed and implemented in IT startup companies (Yu & Petter, 2014).

Understanding how to make *effective decisions* is crucial for successful governance in agile software development teams. Agile methodologies promote a collaborative and iterative approach to decision-making, with a focus on transparency, adaptability, and responsiveness to change (Senapathi & Drury-Grogan ,2017). Agile teams often use various techniques to enhance collective decision-making and prioritize tasks effectively (Moe et al., 2012; Senapathi & Drury-Grogan, 2017). These techniques include user stories, backlog grooming, and sprint planning (Yu & Petter, 2014). Governance practices are crucial in facilitating and strengthening decision-making processes (Senapathi & Drury-Grogan, 2017). They should ensure that teams have the required resources, guidance, and freedom to make well-informed choices that are in line with the organization's objectives and priorities (Senapathi & Drury-Grogan, 2017).

Understanding different *leadership styles* is crucial for effective governance and team dynamics in agile software development teams (Gren & Ralph, 2022; Gutiérrez et al., 2022). Agile leadership embodies the principles of servant leadership, where leaders act as facilitators, mentors, and enablers instead of being authoritative figures (Gutiérrez et al., 2022). To create an environment where trust, collaboration, and continuous improvement thrive (Gren & Ralph, 2022Gutiérrez et al., 2022). Consequently, allowing team members to take ownership of their work and make autonomous decisions ultimately drives success (Kautz et al., 2009). As a skilled advisor, agile leaders understand the importance of effective communication, empathy, and adaptability (Garcia et al., 2019). They focus on aligning with organizational objectives and fostering a culture of innovation and accountability within the team (Garcia et al., 2019).

2.3 Challenges of implementing governance processes in agile software development teams

Managing agile software development teams poses several difficulties when analysed from the contingency theory perspective, which suggests that organizational techniques should be adapted to the circumstances in which they are implemented. A key obstacle is finding the right equilibrium between *adaptability and authority* (Dönmez et al., 2016). Agile teams excel in their ability to be flexible, enabling them to rapidly adjust to evolving requirements and deliver value in incremental stages (Dönmez et al., 2016). Nevertheless, conventional methods of governance sometimes prioritize authority and foresight, which can hinder flexibility (Grass, 2020). Striking a delicate equilibrium between granting teams the freedom to develop and ensuring that projects stay in line with corporate objectives is a multifaceted undertaking (Westermann, 2019).

Another major obstacle is effectively communicating and coordinating. Agile teams frequently operate in many locations and time zones, which poses difficulties for efficient communication and cooperation (Ghani et al., 2019). Governance procedures are necessary to facilitate efficient communication and coordination among team members, stakeholders, and leadership, hence preventing misunderstandings and delays (Reinertsen., 2009). This necessitates the implementation of tools and processes that enable remote cooperation and the sharing of information (Vallon et al., 2018).

Managing *decision-making processes* within agile teams can sometimes provide challenges (Drury & McHugh, 2011). Agile teams are required to make decisions promptly and cooperatively, frequently employing methods like user stories and sprint planning (Coyle et

al., 2015). Governance procedures must facilitate these decentralized decision-making processes while ensuring that decisions are in line with company plans and priorities (Drury & McHugh, 2011). This necessitates the establishment of unambiguous decision-making frameworks and the provision of teams with the necessary information and tools to make well-informed decisions (Greineder et al., 2020).

Effectively handling intricacy is an additional crucial obstacle (Drouin et al., 2021). Agile projects can be intricate, with numerous interdependencies and swiftly evolving requirements (Drouin et al., 2021; Khanagha et al., 2021). Governance systems need to be flexible enough to adjust to these intricacies and offer assistance and direction to teams as they navigate uncertainties (Beretta & Smith, 2023; Moe et al., 2021). Proficiency in comprehending the project's context and proactively addressing and minimizing any risks and problems is essential for this task (Senapathi & Drury-Grogan , 2017).

Cultural alignment is an additional obstacle (Gregory et al., 2016). Agile prioritizes persons and interactions over processes and tools, which may not match well with traditional organizational cultures that emphasize hierarchy and formal procedures (Saarnak & Gustafsson, 2003). Effective governance methods should cultivate a culture that highly regards agility, experimentation, and ongoing enhancement (Kautz et al., 2009). This necessitates the presence of a leader who will actively promote agile principles and exemplify the necessary behaviours (Yang et al., 2009).

2.4 Benefits of implementing governance processes in agile software development team

Implementing governance rules for an agile software development team provides multiple benefits that enhance the team's *productivity, efficacy, and alignment with organizational objectives* (Loureiro et al., 2020). Governance processes ensure that there is alignment with the aims of the business, through the establishment of explicit goals, positions, and duties (Khanagha et al., 2020). They guarantee that the activities of the agile team align with the overall strategic trajectory of the firm (Khanagha et al., 2020). This alignment optimizes the team's concentration and guarantees that their endeavors directly contribute to the organization's triumph (Strode et al., 2022).

Governance mechanisms enhance and support effective *decision-making* within the agile team (Yu & Petter, 2014). Governance processes facilitate informed decision-making by developing frameworks and criteria that align with corporate priorities (Yu & Petter, 2014). This results in

expedited and more efficient decision-making, hence improving the team's capacity to adapt to evolving requirements and priorities (Drury & McHugh, 2011).

Governance processes establish a structured system for effectively *managing risks* (Odzaly et al., 2009). Governance practices aid the team in proactively anticipating and addressing difficulties by identifying potential risks and implementing mitigation solutions (Vajdi & Abbass, 2015; Garcia et al., 2022). This minimizes the probability of project delays or failures, guaranteeing that the team can produce superior products punctually and within the allocated budget (Stray et al., 2020; Masso et al., 2020). Governance processes enable and support the exchange of information and contact among stakeholders (Alzoubi et al, 2015). Governance processes *establish communication channels and protocols* to guarantee that stakeholders are consistently updated on the development of agile projects (Ghani et al., 2019). This level of transparency improves the involvement of stakeholders and contributes to the establishment of trust and reliability with important stakeholders (Abrar, 2019).

In agile software development, governance practices contribute to quality assurance (Karhapää et al., 2021). Governance processes ensure the maintenance of high-quality standards throughout the development process by establishing quality indicators, standards, and testing and validation processes (Behutiye et al., 2022; Kassab et al., 2016). As a result, the company produces products that not only meet but also beyond consumer expectations, thereby enhancing the firm's reputation for excellence (Sirshar & Arif, 2012).

2.5 Evolution of implementing governance processes in agile software development team

The adoption of governance structures and processes in agile software development teams represents a notable departure from conventional, rigid methodology towards more adaptable and flexible approaches. At first, agile approaches were seen as incompatible with governance because they focused on self-organizing teams and iterative development. Nevertheless, when organizations acknowledged the necessity for governance in agile projects to guarantee conformity with strategic objectives and legal requirements, the approach to governance underwent development.

An important tendency in this progression has been the emergence of agile governance frameworks that offer instructions for incorporating governance into agile methods. The Scaled Agile Framework (SAFe) and Disciplined Agile (DA) are frameworks that provide principles

and practices to assist enterprises in implementing governance while preserving the flexibility and autonomy of agile teams (Ahmed et al., 2019; Leffingwell, 2018).

Another prevailing pattern is the prioritization of outcome-based governance when the primary focus lies on evaluating the results of agile initiatives rather than the actual process. This transition has resulted in the creation of novel metrics and key performance indicators (KPIs) that are better suited to agile concepts, including customer happiness, product quality, and time-to-market (Ahmed et al., 2019).

There has also been a shift towards including governance tasks within the agile development lifecycle, instead of considering governance as a distinct and independent activity. This integration enables the fulfillment of governance standards without hindering the flexibility and speed of the development process (Ahmed et al., 2019).

2.6 Theoretical underpinnings: Contingency theory, team performance and governance structures and processes, organizational culture, and decision-making processes

Organizations are shifting from conventional hierarchical, authoritative methods to more cooperative and decentralized decision-making procedures (Lee & Edmondson, 2017). The move is motivated by the acknowledgment that conventional governance techniques may not be well-suited for agile teams, which necessitate autonomy and empowerment to create value rapidly and efficiently (Aghina et al., 2018). Organizations are currently testing out novel governance models that prioritize values such as transparency, collaboration, and continuous development (Gandomani et al., 2020). These models aim to achieve a harmonious equilibrium by offering sufficient supervision and authority to ensure adherence to regulations and excellence, while also granting teams the autonomy to innovate and adjust to evolving demands (Lee & Edmondson, 2017). Studies have shown that implementing strong governance frameworks, such as regular sprint reviews, retrospective meetings, and well-defined roles, can enhance team performance by improving communication, collaboration, and alignment with company objectives (Gandomani et al., 2020). Nevertheless, there are still obstacles to overcome in achieving a harmonious equilibrium between the necessity for control and the agile principles of adaptability and independence (Aghina et al., 2018). Organizations are investigating novel governance methods, such as adaptive governance models, which offer flexibility and reactivity while ensuring that teams fulfill their obligations and provide value (Lee & Edmondson., 2017). This section outlines theoretical underpinning based on

contingency theory (Fiedler, 1967). Additional literature is reviewed that allowed the incorporation of additional concepts of organizational culture and decision-making processes to argue for a conceptual framework that can be used to explain how team performance and governance structure and processes are influenced by contextual factors, leadership style, organizational culture, and decision-making processes (Vidal et al., 2017).

Other theories that can be explored in future studies include Corporate Governance Theory, Agency Theory, and the Lean Startup Approach. This section also presents an overview of these theories.

2.6.1 Contingency theory and governance of agile software development team

This study employs contingency theory to investigate the techniques that govern agile software development teams (Fiedler, 1967). Contingency theory is a management theory that posits that there is no universally superior approach to organizing or leading a company, as the most advantageous course of action depends on a range of internal and external conditions (Fiedler, 1967). The contingencies encompass the organization's dimensions, technological capabilities, surrounding conditions, and the specific mission being undertaken (Vidal et al., 2017). According to contingency theory, the optimal organizational structure or leadership style is contingent upon the specific conditions that an organization is confronted with in each period (Vidal et al., 2017).

Contingency theory is applied in organizational contexts to evaluate the circumstances that affect an organization and customize strategies, structures, and practices to align with those circumstances (Shao et al., 2016). An instance of organization functioning within a dynamic and evolving context may derive advantages from adopting a structure that is more adaptable and decentralized (Ahimbisibwe, 2015). Conversely, an organization confronted with stable circumstances may flourish by adopting a hierarchical and centralized approach (McAdam et al. , 2019).

The theoretical framework of contingency theory originates from organizational behaviour and management research (Fiedler, 1967). The concept of management theory arose throughout the 1960s and 1970s as a reaction to the constraints of previous theories, such as the classical and human relations schools of thought, which put forth universal management principles applicable to all circumstances (Fiedler, 1967). The introduction of contingency theory

provided a more sophisticated comprehension of organizational dynamics, acknowledging that strategies that are effective in one context may not be effective in another (Fiedler, 1967).

Contingency theory has been extensively utilized in numerous studies spanning many academic fields to comprehend how organizations can effectively modify their structures and methods to align with the distinct circumstances they encounter. Donaldson (2001) conducted a study that utilized contingency theory to investigate the correlation between organizational structure and performance within hospital settings. The study revealed that hospitals working in highly unpredictable contexts had superior performance when they implemented decentralized organizational structures, enabling enhanced adaptability and agility in response to changes (Donaldson, 2001).

Fiedler (1967) utilized contingency theory to examine leadership effectiveness, proposing that the optimal leadership style is contingent upon the specific circumstances. The study revealed that task-oriented leadership styles exhibited greater efficacy in scenarios characterized by well-defined and organized tasks, whereas relationship-oriented leadership styles demonstrated greater effectiveness in situations characterized by ambiguous and unstructured tasks (Fiedler, 1967).

Furthermore, Lawrence and Lorsch (1967) employed contingency theory as a framework to comprehend how organizations can effectively respond to shifts in their external contexts. According to the study, businesses with more adaptable structures demonstrated enhanced performance by effectively responding to environmental changes (Lawrence & Lorsch, 1967).

The research collectively illustrates the adaptability and relevance of contingency theory in comprehending organizational behaviour and management methodologies (Donaldson, 2001; Fiedler, 1967; Lawrence & Lorsch, 1967).

The contingency theory has exerted a significant influence on the operational strategies of numerous firms across diverse industries. IBM is a notable example of a firm that has implemented contingency theory principles inside its organizational structure and management processes (Babič, 2014). IBM acknowledges the necessity of employing diverse leadership and organizational techniques in response to varying circumstances, and subsequently adjusts its strategy accordingly (Babič, 2014; Coltman et al, 2015). Likewise, the management methods of General Electric (GE) have been shaped by the principles of contingency theory (Whittington et al., 2017). The corporation has a track record of modifying its organizational

structure and management approach to align with the unique conditions encountered in various markets and industries (Whittington et al., 2017).

McKinsey & Company is an additional organization that has adopted contingency theory. McKinsey, a prominent management consulting business, provides guidance to a multitude of firms regarding organizational design and management, drawing upon the ideas of contingency theory. The company places significant emphasis on the alignment of organizational structures and processes with the unique needs and problems faced by individual clients. In its management methods, Procter & Gamble (P&G) has implemented principles derived from contingency theory (Williams Sr, 2014). Procter & Gamble (P&G) has a decentralized organizational structure, enabling the company to swiftly respond to market dynamics and shifts in consumer preferences (Williams Sr, 2014).

Toyota is renowned for its versatile and responsive management approach, which is shaped by the concepts of contingency theory (Morgan, & Liker, 2020). The Toyota Production System, renowned for its emphasis on continual improvement and agility, enables the organization to efficiently adjust to dynamic market situations (Morgan, & Liker, 2020). These organizations are illustrative examples of how contingency theory has influenced management techniques within the realm of business (Morgan, & Liker, 2020; Whittington et al., 2017; Williams Sr, 2014). By acknowledging the significance of adjusting to evolving circumstances, these corporations have effectively sustained their competitive edge and attained enduring prosperity (Morgan & Liker, 2020; Whittington et al., 2017; Williams Sr, 2014).
In the context of this study, contingency theory will be used to understand the different techniques available for navigating the governance of agile software development teams.

2.6.2 Alternative theories

2.6.2.1 Corporate Governance Theory and Agency Theory

According to Zattoni et al. (2013), corporate governance theory is centered on the frameworks, procedures, and systems put in place to lead and regulate businesses while guaranteeing ethics, responsibility, and openness in decision-making. By encouraging effective monitoring and reducing agency conflicts, this approach seeks to harmonize the interests of stakeholders, including owners, management, and staff (Zattoni et al., 2013). A company's board structure, functions, and responsibilities, regulatory compliance, risk management, and the defense of shareholder rights are important aspects of corporate governance (Zattoni et al., 2013). The

theory is based on fundamental ideas from two sources: stakeholder theory (Freeman, 2010) and agency theory (Jensen & Meckling, 2019), which resolves conflicts between shareholders and management and broadens the focus to include a larger range of interests that the firm must serve. Good corporate governance aids businesses in navigating challenging regulatory environments (Shleifer & Vishny, 1997).

Agency Theory investigates conflicts that arise in relationships in which one party (the principal) delegated work to another (the agent), and the two parties' goals differ (Jensen & Meckling, 2019). The theory is most commonly used in corporate governance, where shareholders (principals) employ managers (agents) to run the business on their behalf (Jensen & Meckling, 2019). A fundamental assumption is that agents may prioritize their own interests over the interests of their principals, resulting in issues such as shirking or risk-averse behavior (Bendickson et al., 2016). To address these issues, mechanisms such as performance-based compensation, monitoring systems, and incentive alignment are frequently implemented (Jensen and Meckling, 2019).

2.6.2.2 Lean Startup Theory

The Lean Startup Theory emphasizes the importance of continuous innovation and validated learning when developing new products or services (Ries, 2011). Eric Ries coined the theory in 2011, which focuses on building a startup efficiently through a "Build-Measure-Learn" feedback loop (Ries, 2011). The goal is to reduce waste, whether in terms of resources, time, or effort, by testing hypotheses and iterating quickly in response to customer feedback (Ries, 2011). Unlike traditional models that require extensive upfront planning, Lean Startup encourages businesses to develop a minimum viable product (MVP) in order to learn the most with the least amount of effort (Blank, 2013). This approach promotes adaptability and responsiveness to market conditions, making it ideal for use in uncertain environments, such as startups and software development, where rapid iteration is critical (Maurya 2012).

2.7 Empirical Literature Review

The perspective adopted in this study is that governing agile software development teams is of critical importance in driving efficiency and growth within IT startup companies. The existing body of literature concerning governance within software development organizations, with a specific focus on agile methodologies, indicates an increasing acknowledgment of the criticality of governance processes and frameworks in guaranteeing the triumph of agile

projects (Behutiye et al., 2022; Garcia et al., 2022; Kassab et al., 2016; Vajdi & Abbass, 2015). According to studies, governance is a critical factor in helping agile teams achieve a balance between autonomy and alignment with organizational objectives (Drury & McHugh, 2011; Yu & Petter, 2014). The need to manage decision-making processes, ensure efficient communication and coordination, and ensure that agile practices are in line with conventional governance frameworks are some of the obstacles identified in managing agile teams (Garcia et al., 2022; Khanagha et al., 2020; Vajdi & Abbass, 2015; Yu & Petter, 2014). The themes that emerged during the systematic review of 97 papers are tabulated in Table 1 below, along with their sources.

Table 1: The themes that emerged during the systematic review of 97 papers.

Theme	**No. of Articles**	**References**	**Research Gap**
Adaptability and flexibility	10	(Dönmez et al., 2016; Grass, 2020; Westermann, 2019)	• The impact of organizational size, industry sector, project complexity, and team composition on adaptability. • The impact of cultural differences on adaptability.
Balancing autonomy and control	13	(Khanagha et al., 2020; Loureiro et al., 2020; Strode et al., 2022).	• Impact of balancing autonomy and control on team performance. • Measurement and assessment of autonomy and control.
Communication and collaboration	9	(Abrar, 2019; Ghani et al., 2019)	• Effectiveness of agile practices in facilitating communication and collaboration.
Decision-making processes	16	(Garcia et al., 2022; Khanagha et al., 2020; Vajdi & Abbass, 2015;Yu & Petter, 2014;)	• Influence of organizational culture on decision-making processes. • Impact of decision-making processes on innovation and creativity.

Theme	No. of Articles	References	Research Gap
Organizational culture and leadership	13	(Deshpande et al., 2016; Kautz et al., 2009; Saarnak & Gustafsson, 2003; Yang et al., 2009).	• Role of leadership in fostering a culture of innovation. • Impact of organizational culture on employee engagement and satisfaction.
Quality assurance	11	(Behutiye et al., 2022; Kassab et al., 2016; Sirshar & Arif, 2012; Karhapää et al., 2021).	• Impact of organizational culture on employee engagement and satisfaction. • Integration of quality assurance with agile practices.
Risk management	16	(Masso et al., 2020; Odzaly et al., 2009; Stray et al., 2020)	• Effectiveness of risk identification techniques. • Impact of risk management on team collaboration.
Stakeholder engagement	9	(Bernat et al., 2023; Dragos, 2021)	• Effectiveness. of Stakeholder Engagement Strategies. • Measurement and Assessment of Stakeholder Engagement.

The findings from the empirical review of the literature are discussed below:

2.7.1 Adaptability and flexibility

The empirical research on adaptability and flexibility in software development teams emphasizes an agreement regarding their crucial significance for organizational resilience and performance (Carmeli & Markman, 2011; Maglio, 2017). Nevertheless, divergent perspectives exist regarding the ideal equilibrium between structure and flexibility (Dönmez et al., 2016; Grass, 2020; Westermann, 2019). Several studies highlight the need for a specific level of governance to offer stability and direction, which can improve the ability to adjust and adapt (Carmeli & Markman, 2011; De Prins et al., 2014). On the other hand, Gómez et al. (2016) and Maglio (2017) contend that excessive governance might suppress originality and ingenuity,

thus impeding the ability to adapt and respond effectively to change. Dönmez et al. (2016) argue that supportive and empowering leadership styles are typically linked to enhanced adaptability. However, Grass (2020) has varying opinions with Westermann (2019) on whether directive leadership is needed in specific situations to offer clear guidance and direction. These findings emphasize the intricate relationship between the organization, leadership, and adaptability in software development teams, emphasizing the necessity for subtle and situation-specific methods to promote adaptability and flexibility (Carmeli & Markman, 2011; De Prins et al., 2014; Dönmez et al.,2016; Grass,2020; Gómez et al.,2016; Maglio,2017; Westermann,2019).

2.7.2 Balancing autonomy and control

The existing body of research on the trade-off between autonomy and control in software development teams reveals an unanimous agreement regarding the significance of achieving an ideal equilibrium between these two elements (Deci et al., 2017; Jansen et al., 2021). Excessive control can suppress creativity and invention, whereas excessive autonomy can result in chaos and inefficiency (Deci et al., 2017; Jansen et al., 2021). Nevertheless, there are divergent perspectives on the most effective approach to attain this equilibrium. Several studies propose that a moderate amount of organization and regulation is essential to establish a framework in which teams can function efficiently (Carmeli & Markman, 2011; De Prins et al., 2014). Conversely, some argue that granting autonomy should be prioritized to foster innovation and creativity (Amabile et al., 1996; Deci et al., 2017). In addition, it is generally believed that supportive and empowering leadership styles contribute to increased autonomy. However, there are differing opinions on whether more directive leadership styles are needed in specific situations to provide clear guidance and decision-making (Adkins, 2010; Lencioni, 2011). These findings emphasize the intricacy of managing autonomy and control in software development teams, suggesting the requirement for versatile and adaptable techniques that consider the team's specific environment and aims (The Arbinger Institute, 2015; Adkins, 2010; Lencioni, 2011).

2.7.3 Communication and collaboration

Research on communication and collaboration in software development teams consistently shows that they have an influence in the success of projects and the performance of teams (Jehn & Bezrukova, 2010; Marks et al., 2001). Efficient communication and cooperation are

considered crucial for promoting innovation, exchanging knowledge, and resolving problems (Jehn & Bezrukova, 2010; Marks et al., 2001). Nevertheless, there are divergent perspectives regarding the most efficient approaches to accomplish this goal. Several studies highlight the significance of transparent communication channels and frequent team meetings to enhance collaboration (Carmeli & Markman, 2011; De Prins et al., 2014). Conversely, other studies support the use of informal communication methods, such as open office layouts and digital collaboration tools (Amabile et al., 1996; Deci et al., 2017).

2.7.4 Decision-making processes

The empirical literature on decision-making processes in software development teams unequivocally establishes the consensus of their significance in determining project outcomes and team performance (Serrador & Pinto, 2015; Santamaria et al., 2021). Efficient decision-making procedures are essential to enable teams to address obstacles and seize opportunities promptly and knowledgeably (McChrystal et al., 2015). Nevertheless, there exist divergent perspectives regarding the most efficient methods of decision-making (Serrador & Pinto, 2015; Santamaria et al., 2021). Several studies highlight the importance of employing organized decision-making procedures, such as the Rational Decision Making (RDM) or Analytic Hierarchy Process (AHP) frameworks (Serrador & Pinto, 2015; Santamaria et al., 2021). On the other hand, some people support the use of agile processes, which emphasize iterative and collaborative decision-making, as opposed to rigid and inflexible approaches (Reinertsen, 2009). This viewpoint is supported by studies conducted by Carmeli & Markman (2011) and De Prins et al. (2014). In addition, research suggests that supportive and participative leadership styles are typically linked to enhanced decision-making processes (Carmeli & Markman, 2011; Jehn & Bezrukova, 2010). These findings emphasize the intricate nature of decision-making processes in software development teams, underscoring the necessity for flexible approaches that consider the environment and objectives of the team (Bass & Riggio, 2006; De Prins et al., 2014).

2.7.5 Organizational culture and leadership

Research on organizational culture and leadership in software development teams consistently shows that they have a substantial influence on team performance and project outcomes (Carmeli & Markman, 2011; Jehn & Bezrukova, 2010). Organizational culture is acknowledged as a crucial factor that influences employee engagement, innovation, and

flexibility. A robust culture is typically associated with increased levels of team effectiveness (Carmeli & Markman, 2011; Jehn & Bezrukova, 2010). Nevertheless, there are divergent perspectives regarding the most efficient leadership styles for cultivating a favourable organizational culture (Marquet & Reinertsen, 2018). Several studies highlight the significance of supportive and empowered leadership, which has the potential to foster a culture characterized by trust and collaboration (Carmeli & Markman, 2011; Deci et al., 2017). On the other hand, some argue that some situations may require leaders to adopt more authoritative styles to give explicit guidance and make decisions (Bass & Riggio, 2006; De Prins et al., 2014). Furthermore, although there is consensus regarding the significance of matching leadership styles with organizational culture (Carmeli & Markman, 2011; Jehn & Bezrukova, 2010), there are varying viewpoints on the degree to which leaders should adjust their styles to align with the culture, or vice versa (Edmondson, 2018). The findings emphasize the intricate relationship between corporate culture and leadership in software development teams, underscoring the necessity for leaders to possess adaptability and contextual awareness in their approach (Edmondson, 2018).

2.7.6 Quality assurance

The literature on quality assurance (QA) in software development teams shows a unanimous agreement on its significance in guaranteeing the production of high-quality software products (Chowdhury et al., 2018; Wang et al., 2024). Quality assurance (QA) techniques have a vital role in identifying and preventing errors, raising the overall quality of products, and increasing customer satisfaction (Chowdhury et al., 2018; Wang et al., 2024). Nevertheless, there are divergent perspectives regarding the most efficient quality assurance systems (Karhapää et al., 2021). Several studies support the implementation of a comprehensive quality assurance (QA) strategy, which involves thorough testing, code reviews, and tracking quality metrics (Chowdhury et al., 2018; Wang et al., 2019). Some experts emphasize the significance of incorporating quality assurance (QA) approaches into agile development processes, such as test-driven development and continuous integration, to guarantee the early identification and resolution of faults (Bacchelli & Bird, 2013; Wang et al., 2024). Furthermore, although there is consensus regarding the importance of leadership in fostering a culture of excellence and ongoing enhancement (Chowdhury et al., 2018; Wang et al., 2024), there are varying viewpoints on the degree to which quality assurance (QA) should be concentrated or dispersed within a company. These findings emphasize the continuous intricacy of quality assurance

(QA) in software development teams, suggesting the necessity for versatile and adaptable QA procedures that correspond with the context and objectives of the team.

2.7.7 Risk management

Research on risk management in software development teams consistently demonstrates its crucial impact on project success and emphasizes the need to incorporate risk management strategies into the development process (Khan et al., 2020; Masso et al., 2020). Risk management is crucial for the identification, evaluation, and reduction of risks that could potentially affect project schedules, budgets, and quality (Khan et al., 2020; Masso et al., 2020). There are divergent perspectives regarding the most efficient risk management solutions. Recent studies highlight the importance of taking a proactive stance toward risk management, which involves promptly identifying risks, conducting regular risk assessments, and creating mitigation plans (Khan et al., 2020; Masso et al., 2020). Some proponents argue for the incorporation of risk management into agile development processes by conducting regular risk assessments and continuously monitoring hazards throughout the project lifecycle (Khan et al., 2020; Masso et al., 2020). Khan et al. (2020) concurs with Masso et al. (2020) about the significance of leadership endorsement for risk management. However, there are divergent viewpoints regarding how risk management should be standardized or customized for individual projects (Garcia et al., 2022).

2.7.8 Stakeholder engagement

Research on stakeholder engagement in software development teams shows a unanimous agreement on its importance for project success and the significance of incorporating stakeholders throughout the development process (Dwivedi et al., 2019; Silva et al., 2017). Involving stakeholders can result in improved alignment of project objectives, heightened satisfaction, and enhanced project outcomes (Dwivedi et al., 2019; Silva et al., 2017). Loureiro et al. (2020) emphasize adopting a methodical approach to involving stakeholders. This strategy involves identifying the main stakeholders, comprehending their requirements and expectations, and actively involving them in decision-making processes (Loureiro et al., 2020). According to Dwivedi et al. (2019) and Silva et al. (2017), digital technologies, such as social media and online platforms, are significant in facilitating communication and collaboration among stakeholders. Furthermore, Dwivedi et al. (2019) and Silva et al. (2017) agree that although there is consensus regarding the importance of leadership in encouraging stakeholder

involvement (Dwivedi et al., 2019; Silva et al., 2017), there are varying viewpoints on the degree to which stakeholder engagement should be standardized or customized for individual projects (Joslin & Muller, 2016a; Milosevic & Patanakul, 2005). The results highlight the intricate nature of involving stakeholders in software development teams and emphasize the necessity for adaptable strategies that correspond to the team's particular circumstances and objectives (Di Gangi et al., 2023; Dobrigkeit et al, 2016).

2.8 Conceptual Framework for Contingencies, Governance structures and processes, and team performance

The rationale for employing contingency theory in this study stems from its capacity to offer a nuanced comprehension of the governance mechanisms in agile software development teams within the framework of software development organizations. Contingency theory posits that organizational techniques should be adapted to the specific conditions in which they are implemented, rather than adhering to a universal approach that applies to all situations (Donaldson, 2001). Within the realm of agile software development, where teams frequently work in unpredictable and ever-changing conditions, this theory provides significant perspectives on how governance processes can be adjusted to various scenarios to achieve the best possible performance (Serrador & Pinto, 2015). This study seeks to utilize contingency theory to uncover the contextual elements that affect governance procedures in agile teams and analyze the impact of these factors on team performance. The effectiveness of contingency theory in understanding the relationship between contextual elements and organizational behaviors has been supported by research (Gandomani et al., 2020). This study aims to utilize contingency theory as a conceptual framework to offer practical suggestions for software development businesses to strengthen their governance processes and optimize the performance of their agile teams. Thus, in the study to explore how to navigate implementing governance structures and processes in an agile software development team, contingency theory led to the selection of the following variables; independent variables as “contextual factors” and “leadership style”, with mediating variables as “organizational culture”, and “decision-making processes” and dependent variables as “team performance” and “governance structures and processes”. The conceptual framework is depicted in Figure 2: Conceptual framework for navigating governance processes in an agile software development team. The conceptual framework was developed from the concept of contingency theory by Fielder (2015) in terms of the influential factors to the implementation of governance within an agile software development team as well as studies by Eckstein et al. (2018), Lacity et al. (2017),

and Serrador and Pinto (2015) for the elements that must be included in governance structures and processes.

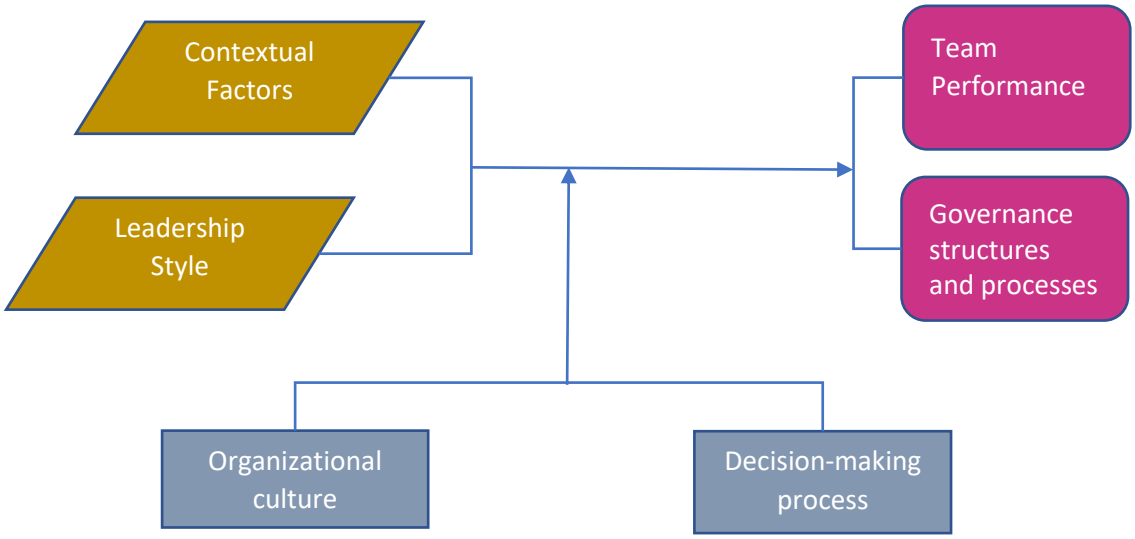

Figure 2: Conceptual framework for navigating governance processes in an agile software development team

2.8.1 Linking contextual factors and governance structures and processes in agile software development team

Recent research has emphasized the significance of contextual factors in influencing the governance structures and procedures of agile software development teams. Factors such as the *size of the business*, *the industry sector it operates in*, and *the complexity of the project* have been identified as influential in determining the selection and design of governance mechanisms in agile teams (Eckstein et al., 2018; Lacity et al., 2017). The size of an organization might influence the necessity for defined governance structures, as larger businesses typically require more formal procedures to efficiently manage agile teams (Eckstein et al., 2018). Moreover, the type of governance required can be influenced by the industry sector, as sectors that face regulatory restrictions or intense competition necessitate more rigorous governance systems (Lacity et al., 2017). In addition, the complexity of a project can influence the design of governance mechanisms. More complicated projects typically necessitate more structured decision-making processes and communication channels (Eckstein et al., 2018).

Table 2: The link between contextual factors and governance structures and processes in agile software development team

Construct	Interpretation	Measures	Reference
Organizational size	Large companies have complex governance structures and processes, while smaller ones are more flexible and informal.	Number of employees, annual revenue, or organizational hierarchy (e.g., number of management layers).	(Eckstein et al., 2018; Lacity et al., 2017; Serrador & Pinto, 2015).
Industry sector	Different industries' legal requirements, market characteristics, and competitive landscapes might affect agile team governance.	Industry classification (e.g., healthcare, finance, technology) or market share within a specific industry	(Eckstein et al., 2018; Lacity et al., 2017; Serrador & Pinto, 2015).
Project complexity	The complexity of a project, including its scope, scale, and technical requirements, can impact the governance needs of agile teams.	Project size (e.g., number of team members, budget), technical complexity (e.g., use of advanced technologies), and project duration.	(Eckstein et al., 2018; Lacity et al., 2017; Serrador & Pinto, 2015).
Team composition	The composition of agile teams, including the skills, experience, and diversity of team members, can influence the governance processes needed to support team performance	Team member roles and responsibilities, skills inventory, and team diversity (e.g., gender, ethnicity).	(Eckstein et al., 2018; Lacity et al., 2017; Serrador & Pinto, 2015).

Thus, in linking contextual factors and governance structures and processes in agile software development team, based on the rationale that varying contextual circumstances, such as the size of the company, the sector it operates in, and the complexity of the project, may necessitate the use of alternative governance models. For instance, a sizable corporation may necessitate

more rigid governance frameworks in contrast to a small entrepreneurial venture. The following research question emerged:

- *Secondary Research Question 1: How do contextual factors influence the design and implementation of governance structures and processes in agile software development teams?*

2.8.2 Linking leadership style and performance, governance structures and processes in agile software development team

A recent study has shown the connection between leadership style and governance structures and processes in agile software development teams (Hoda et al., 2012; Srivastava & Jain, 2017; Tessem, 2014). Transformational leadership is associated with more effective governance systems, defined by decentralized decision-making and a focus on empowering team members (Srivastava & Jain, 2017; Vera et al., 2016). Transformational leaders possess the capacity to inspire and excite their teams, fostering a cooperative and innovative environment that is advantageous for applying agile approaches (Srivastava & Jain, 2017; Vera et al., 2016). Transactional leadership, which focuses on utilizing rewards and punishments to incentivize people according to their performance, may not be as efficient in agile workplaces that prioritize autonomy and self-organization (Srivastava & Jain, 2017; Vera et al., 2016). Organizations may improve the overall performance of their teams by aligning their leadership practices with the governance structures and processes (Hoda et al., 2012; Tessem, 2014). This will optimize the assistance provided to agile software development teams (Hoda et al., 2012; Tessem, 2014).

Table 3: The link between leadership styles and performance, governance structures and processes in agile software development team

Construct	Interpretation	Measures	Reference
Transformational Leadership	Transformational leaders stimulate and encourage team members to attain elevated levels of performance.	Evaluation of idealized influence, inspirational motivation, intellectual stimulation, and customized concern.	(Avolio & Bass, 1995; Yukl,1999)

Construct	Interpretation	Measures	Reference
Transactional Leadership	Values setting clear goals and expectations for team members and provide incentives for meeting those goals.	Evaluation of contingent reward and management-by-exception.	(Avolio & Bass, 1995; Yukl, 1999).
Servant Leadership	Servant leaders prioritize the needs of their team members above their own.	Evaluation of servant leadership behaviors such as empathy, listening, stewardship, and empowerment.	(Liden et al., 2008; Chiniara & Bentein, 2016; Greenleaf, 2002).
Adaptive Leadership	Adaptive leaders respond effectively to change and uncertainty.	Evaluation of adaptive behaviors such as flexibility and adaptability.	(Chiniara & Bentein, 2016; Linsky & Heifetz, 2002).
Distributed Leadership	Distributed leadership involves sharing leadership responsibilities among team members.	Assessment of the extent to which leadership responsibilities are shared among team members.	(Mckenzie & Locke, 2014; Chiniara & Bentein, 2016).

Thus, in linking leadership style and governance structures and processes in agile software development team, the following research questions emerged:

> *Secondary Research Question 2: What is the impact of transformational leadership style on the implementation and adherence of governance structures and processes in agile software development teams?*

Where the rationale is that transformational leaders are recognized for their capacity to inspire and motivate team members, creating a climate that encourages innovation and flexibility (Weichbrodt et al, 2022). This leadership style has the potential to result in the creation of

governance structures and processes that are highly adaptable to evolving project requirements and the needs of stakeholders (Batool, 2020).

Secondary Research Question 3: What is the impact of transactional leadership style on the implementation and adherence of governance structures and processes in agile software development teams?

Transactional leaders prioritize establishing explicit objectives and expectations, and ensuring team members comply with them (Weichbrodt et al, 2022). This leadership style can result in the establishment of governance structures and procedures that prioritize control and compliance to assure the fulfillment of project criteria (Weichbrodt et al, 2022; Gren & Ralph, 2022).

Secondary Research Question 3: What is the impact of laissez-faire leadership style on the implementation and adherence to governance structures and processes in agile software development teams?

Laissez-faire executives typically adopt a non-interventionist approach and offer minimal guidance or instruction to their team members (Weichbrodt et al, 2022). This leadership style can lead to a lack of well-defined governance structures and processes, resulting in confusion and inefficiency within the team (Weichbrodt et al, 2022).

Additionally, in linking leadership style and performance in an agile software development team, the following research questions arise:

Secondary Research Question 4: What is the influence of transformational leadership style on the level of performance in agile software development teams?

This is derived from the rationale that transformational leaders are recognized for their ability to inspire and motivate their people, promote innovation, and cultivate a collaborative atmosphere (Weichbrodt et al, 2022; Batool, 2020). These attributes are probable to result in enhanced team performance in agile software development (Batool, 2020; Weichbrodt et al, 2022).

Secondary Research Question 5: What is the influence of a transactional leadership style on the level of performance in agile software development teams?

Based on the reasoning that transactional leaders prioritize establishing explicit objectives, offering incentives for their accomplishment, and guaranteeing the effective execution of activities (Weichbrodt et al, 2022; Gren & Ralph, 2022). These characteristics are expected to enhance team performance in agile software development (Gren & Ralph, 2022; Weichbrodt et al, 2022).

Secondary Research Question 6: What is the influence of laissez-faire leadership style on the level of performance in agile software development teams?

Founded on the rationale that Laissez-faire leaders, who offer no advice or direction to their teams, can cause uncertainty, a lack of accountability, and ultimately lower performance in agile software development (Weichbrodt et al, 2022).

2.8.3 Linking organizational culture and governance structures and processes in agile software development team

Recent research has emphasized the link between organizational culture and governance structures and processes in agile software development teams (Lee & Chen, 2019; Mishra et al., 2021). An agile culture, characterized by values such as collaboration, flexibility, and continuous improvement, is conducive to the development of governance structures that support agile practices (Gandomani et al., 2020; Nguyen, 2016). Organizations with an agile culture are more likely to have governance mechanisms that prioritize transparency, adaptability, and team empowerment, leading to higher levels of team performance and project success (Dove, 2002; Gandomani et al., 2020). In contrast, organizations with a more traditional, hierarchical culture may struggle to implement agile governance practices, as these cultures often prioritize control and predictability over flexibility and collaboration (Dove, 2002; Gandomani et al., 2020). By fostering an agile culture, organizations can create an environment that supports the effective implementation of governance structures and processes in agile software development teams (Lee & Chen, 2019; Mishra et al., 2021).

Table 4: Linking organizational culture and governance structures and processes in agile software development team

Construct	Interpretation	Measures	Reference
Agile culture	The extent to which an organization's values, norms, and practices	Measures the extent to which an organization's	(Sutherland and Sutherland, 2014; Lee & Chen,

Construct	Interpretation	Measures	Reference
	align with the principles of agile methodologies.	culture supports agile practices.	2019; Mishra et al., 2021)
Cultural values	The core beliefs and priorities of an organization, which influence its decision-making processes and governance practices.	Evaluation of cultural values using four dimensions: clan, adhocracy, market, and hierarchy.	(Cameron & Quinn, 2011;)
Collaborative practices	The extent to which team members work together, share knowledge, and make decisions collectively, which are important aspects of agile governance.	The frequency and effectiveness of collaborative practices within agile teams.	(Hoda & Marshall, 2010; Nguyen, 2016)

Thus, in linking organizational culture and governance structures and processes in agile software development team, the following research question arises:

> *Secondary Research Question 7: What is the role of organizational culture in enhancing the impact of governance structures and processes on agile software development team performance?*

2.8.4 Linking decision-making processes and governance structures and processes in agile software development team

Recent research has emphasized the correlation between decision-making procedures and governance frameworks in agile software development teams (Drury et al., 2012; Fontana et al., 2015; McAvoy & Butler, 2009; Moe et al., 2012; Tessem, 2015). Agile decision-making procedures, such as collaborative decision-making and iterative decision-making, are strongly connected to governance structures that prioritize transparency, empowerment, and adaptation (Alami et al., 2023; Tessem, 2015). Collaborative decision-making is facilitated by governance systems that establish distinct roles and duties and foster transparent communication among team members (Alami et al., 2023; Moe et al., 2012). The process of iterative decision-making involves making decisions gradually by incorporating input and learning (Alami et al., 2023; Moe et al., 2012). This process is supported by governance frameworks that enable flexibility

and rapid adaptation to changing conditions (Alami et al., 2023; Fontana et al., 2015). Organizations can enhance the coherence and effectiveness of decision-making in agile software development teams by aligning decision-making procedures with governance structures (Drury et al., 2012).

Table 5: Linking decision-making processes and governance structures and processes in agile software development team

Construct	Interpretation	Measures	Reference
Decision-Making Autonomy	The extent to which team members are empowered to make decisions related to their work without needing approval from higher levels of management.	The perceived level of autonomy team members have, in making decisions within their team.	(Zhang et al., 2015)
Decision-Making Speed	How quickly decisions are made within agile teams, which is important for maintaining agility and responsiveness to change.	The average time taken to make and implement decisions within agile teams.	(Lehtinen & Salo, 2011)
Governance Transparency	The degree to which governance structures and decision-making processes are visible and understood by all team members.	The perceived transparency of governance structures and processes within agile teams.	(Dikert et al., 2016)

Thus, in linking decision-making processes and governance structures and processes in agile software development team, the following research question emerges:

Secondary Research Question 8: What is the role of decision-making processes in enhancing the impact of governance structures and processes on agile software development team performance?

2.8.5 Linking contextual factors and agile software development team performance

Recent studies have highlighted the influence of contextual factors on the performance of agile software development teams (Peng et al., 2014; Serrador & Pinto, 2015). Serrador and Pinto (2015) and Licorish & MacDonell (2018) have highlighted organizational size, industry sector, project complexity, and team makeup as crucial contextual elements that impact team effectiveness. For instance, more sizable businesses may encounter difficulties in effectively communicating and coordinating tasks, leading to potential negative impacts on team performance (Serrador & Pinto, 2015; Licorish & MacDonell, 2018). Industries that have intense competitiveness or strict regulatory requirements might exert extra strain on agile teams, which can affect their effectiveness (Serrador & Pinto, 2015; Peng et al., 2014). Research has shown that there is a correlation between the complexity of a project and the performance of the team working on it (Peng et al., 2014). More complicated projects tend to need a higher level of coordination and collaboration among team members (Peng et al., 2014; Serrador & Pinto, 2015). Team composition, which encompasses characteristics such as the variety of abilities and backgrounds, can ultimately affect team performance by shaping team members' level of collaboration and communication (Licorish & MacDonell, 2018; Lee & Chen, 2019; Serrador & Pinto, 2015). Lee and Chen (2019) further point out that gaining a comprehensive understanding of these contextual aspects is crucial for firms aiming to enhance the effectiveness of their agile software development teams.

Table 6: Linking contextual factors and agile software development team performance

Construct	Interpretation	Measures	Reference
Team Size	The number of members in an agile software development team. It can impact communication, coordination, and decision-making processes within the team.	The total number of team members or the number of developers specifically.	(Cockburn, 2007)

Construct	Interpretation	Measures	Reference
Team Composition	The mix of skills, experience, and expertise among team members. It can influence the team's ability to solve complex problems and deliver high-quality software.	Assessment of the diversity of skills, experience levels, and roles within the team.	(Cataldo et al., 2009).
Technology Complexity	The level of difficulty or sophistication of the technologies used in software development. It can impact development speed, quality, and team coordination.	Measurement based on the novelty of the technology, the level of interdependencies, and the required expertise to use it.	(Boehm & Turner, 2005)

Thus, in linking contextual factors and agile software development team performance, the following research question arises:

Secondary Research Question 9: What is the impact of contextual factors on the level of performance of an agile software development team?

2.8.6 Linking organizational culture and agile software development team performance

Recent studies have highlighted the influence of contextual factors on the performance of agile software development teams. Serrador and Pinto (2015) have highlighted organizational size, industry sector, project complexity, and team makeup as crucial contextual elements that impact team effectiveness. For instance, larger companies may encounter difficulties in communication and coordination, leading to potential impacts on team performance (Serrador & Pinto, 2015). Likewise, agile teams may face increased performance challenges while operating in areas characterized by intense competition or strict regulatory demands (Serrador & Pinto, 2015). Research has shown that there is a connection between the complexity of a project and the performance of the team working on it. More complex projects tend to require a higher level of coordination and collaboration among team members (Serrador & Pinto, 2015). Team composition, which encompasses characteristics such as the variety of abilities

and backgrounds, can have an impact on team performance by influencing the level of collaboration and communication among team members (Serrador & Pinto, 2015).

Table 7: Linking organizational culture and agile software development team performance

Construct	Interpretation	Measures	Reference
Empowerment and Autonomy	The extent to which team members are given the freedom to make decisions and take ownership of their work. Agile teams thrive in environments where individuals are empowered to innovate and take risks.	The degree to which employees feel empowered in their work, including factors such as decision-making authority and autonomy.	(Thomas & Velthouse, 1990)
Learning Culture	Values continuous improvement, experimentation, and reflection. Agile teams benefit from organizations that encourage learning and adaptation based on feedback and experience.	The extent to which an organization promotes learning and innovation, including factors such as knowledge sharing, risk-taking, and openness to new ideas.	(Garvin et al., 2008)

Thus, in linking organizational culture and agile software development team performance, the following research question arises:

Secondary Research Question 10: What is the role of organizational culture on the impact of contextual factors on agile software development team performance?

Chapter 3. Methodology

3.1 Methodology Introduction

This chapter provides a comprehensive explanation of the research approach, methods for collecting data, and analytical tools employed to gain insights into the governance of agile software development teams. The chapter also outlines the research methodology employed to investigate the challenges faced in the governance of agile software development teams. The chapter also explores data analysis, including ***thematic analysis to identify patterns and themes*** in governance processes. This comprehensive methodology seeks to enhance comprehension of how agile software development teams ***perceive, execute, and oversee governance***, so contributing to the knowledge of software development organization governance.

3.2 Research Approach

The research approach is qualitative in nature (Aspers & Corte, 2019). The purpose of qualitative research is to examine not-so-obvious factors, but it is also to make new distinctions about any phenomenon, for example, by coining new ideas and identifying new variables (Aspers & Corte, 2019). The goal of qualitative research is to investigate how humans understand, experience, interpret, and construct social reality (Sandelowski, 2004).

The rationale for qualitative analysis in this study is to acquire a holistic comprehension of governance procedures in agile software development teams (Bougie, 2019). Qualitative analysis, including techniques such as semi-structured interviews, enables a comprehensive investigation of stakeholders' perspectives, encounters, and behaviours concerning governance (Bougie, 2019). This methodology is highly beneficial for gathering comprehensive and intricate insights and exposing subtle aspects of governance that may not be captured just by quantitative tools (Bougie, 2019).

The qualitative research approach utilized in this study is related to inductive reasoning since it begins with the collection of information or observations before going on to the creation of ideas or conceptions based on those findings (Creswell, 2009). The following questions must be answered in the analysis of the results:

- How do contextual factors such as organizational size, industry sector, and project complexity influence the design and implementation of governance processes in agile software development teams?

- How do different leadership styles impact the navigation of governance processes in agile software development teams?
- How do organizational culture and values impact the navigation of governance processes in agile software development teams?
- What strategies can agile software development teams adopt to effectively navigate governance processes in diverse organizational contexts?

3.3 Research Paradigm

The researcher intends to comprehend and communicate beliefs about the nature of reality, what can be learned about it, and how to acquire this knowledge (Rehman & Alharthi, 2016). The ontology of beliefs and assumptions serves as a global perspective or philosophical framework for study; these are known as research paradigms. The paradigms may be founded on specific standards or characteristics of a profession, or even on a person's personal convictions (Ulz, 2023). By selecting a paradigm, the researcher avoids focusing on their own philosophical expertise and chooses a better construct than other possibilities (Rahi, 2017).

Positivism, interpretivism, advocacy, and pragmatism are common research paradigms (Rahi, 2017).

Positivism is concerned with the development of a comprehensive social system that employs scientific methods to analyse society and people to improve them (Bougie, 2019; Al-Ababneh, 2020). Positivism is founded on genuine experience rather than supposition (Al-Ababneh, 2020). It is also about the degree to which the study's results are stable throughout time and space, as well as the consistency of the results over time (Bougie, 2019; Al-Ababneh, 2020). As a result, quantitative research will employ these criteria to perform social surveys and experiments to find variables and general patterns (Mohajan, 2020).

Interpretivism holds that humans and knowledge are interconnected, and it considers relativist ontology and subjective epistemology (Junjie & Yingxin, 2022). Interpretivist epistemology investigates the relationship between the research and the research subject, with a focus on the meaning, voice, perspective, experience, thoughts, and feelings communicated by the individual (Moustakas, 1994).

Advocacy or the participatory paradigm originated because of researchers who believed in positivist assumptions, positivism denies the positivist stance that a researcher can objectively investigate society (Panhwar et al., 2017). In the 1980s and 1990s, imposed structural laws and

ideas that did not fit all persons in our society, as well as social justice issues that needed to be addressed, gave rise to this perspective (Creswell, 2009). This point of view must be linked to politics, political agendas, and legislation for this study to develop a reform agenda that may affect the lives of the research participants (Creswell, 2009).

Pragmatism is a typical research paradigm employed in social science research; it uses principles, concepts, procedures, or a mix of these approaches to solve practical research problems (Allemang et al., 2021).

Given the research objectives and nature of the investigation, the ***interpretivism*** paradigm is deemed relevant for this study (Junjie & Yingxin, 2022; Moustakas, 1994). Interpretivism promotes the use of qualitative research approaches to better comprehend, analyze, and interpret a study's patterns of development rather than the study's outcomes (Nassaji, 2020). As a result of the richness of the context, authenticity of details, and narrative quality in the efforts to generate inductive generalizations from the themes and relationships identified from student experiences to develop new theories as part of the study (Penaloza et al., 2020), the interpretivism paradigm has been chosen to be applied in this study. The interpretivism paradigm is consistent with the study aims and research questions, and it has been proven to be an effective paradigm in prior qualitative investigations (Yadav, 2021).

It has also been demonstrated that interpretivism can be influenced by the researcher's subjective bias (Junjie & Yingxin, 2022), therefore ethics and dealing with ethical issues are critical in qualitative research and will be explored in Section 3.7 of this chapter.

3.4 Research Design

Considering the research objective, the availability of resources, and research phenomena, the research design that appears relevant is the case study research design and survey research design (Clarke & Davidson, 2020; Gable, 1994; Hancock et al., 2021; Woodside, 2010; Yin, 2009). The rationale for combining case study and survey research methodologies in the study on navigating governance procedures in agile software development teams arises from the aim of attaining a thorough and nuanced comprehension of governance practices (Gable, 1994; Woodside, 2010). The case study component provides a comprehensive analysis of governance in agile teams, offering in-depth qualitative data through interviews, observations, and document analysis in a single organization (Yin, 2009). This methodology enables a thorough examination of the intricacies and subtleties of governance procedures, providing a valuable

understanding of how these procedures are formulated, executed, and supervised within agile teams (Yin, 2018).

The questionnaire survey study design offers a more comprehensive viewpoint by gathering quantitative data from a bigger sample of agile teams (Brace, 2018). Surveys can gather information about various practices, perceptions, and outcomes that are associated with governance procedures, team performance, and contextual factors (Brace, 2018; Ricci et al., 2019; Story & Tait, 2019; Braun et al., 2021). The results can potentially reveal conclusions that may be used to broaden conversations on governance procedures in agile software development teams (Creswell & Creswell, 2017; Bavdaz et al., 2019).

The case study data can enhance the understanding of the survey findings by offering a broader perspective on the fundamental mechanisms and dynamics of governance processes within agile teams (Yin, 2009). In contrast, the survey data can enhance the case study findings by offering a more comprehensive viewpoint and enabling comparisons among other teams and organizations (Creswell & Creswell, 2017). In general, a case study design involves an in-depth examination and analysis of a specific case or organization (Bergen & While, 2000). In this study, an IT startup company within an OEM will be selected as the case. However, case studies are not void of limitations, they are often limited to a single organization, which may limit the generalizability of the findings (Tellis, 1997; Baxter & Jack, 2008). It is also important to pay attention to potential biases as an employee of an IT startup company conducting the study (Tellis, 1997; Baxter & Jack, 2008).

3.5 Sampling technique

A sampling technique is a procedure for selecting a subset of individuals or units from a larger population for inclusion in a research study (Maree, 2007). Sampling techniques are employed when studying the entire population of interest is impractical or impossible, sampling techniques are utilized (Maree, 2007). Researchers can draw conclusions about the larger population based on the characteristics and data collected from a representative sample (Maree, 2007).

One of the many sampling techniques is purposive sampling, which is a non-probability sampling method in which participants are chosen based on specific characteristics or criteria pertinent to the research study (Maree, 2007; Bryman, 2016). In this study, they will be selected based on their exposure and experience of agile methodology within software development

teams. Purposive sampling has some advantages but has limitations and potential biases that must be considered (Rai & Thapa, 2020; Palinkas et al., 2015; Groves, 2009; Dillman *et al*., 2014).

The advantage of using purposive sampling techniques is that participants with relevant knowledge, expertise, or experience are selected which offers an opportunity to provide insightful and detailed information (Palinkas et al., 2015). It is also frequently more efficient and cost-effective as researchers' efforts are on recruiting participants who are most likely to contribute rich, pertinent data instead of a haystack search (Campbell et al., 2020; Rai & Thapa, 2020).

The limitation that purposive sampling has included is a limited generalization because a sample derived from purposeful sampling may not represent the entire population (Groves, 2009; Dillman *et al*., 2014). The sample may be biased toward characteristics or points of view, making it difficult to generalize the results to the larger population (Groves, 2009; Dillman *et al*., 2014). This technique is usually borne with subjectivity and bias because, in purposive sampling, the selection of participants relies on the judgment and expertise of the researcher (Groves, 2009; Dillman *et al*., 2014). This introduces the possibility of researcher bias, as the researcher may subconsciously favor participants who match their preconceived notions or expectations (Groves, 2009; Dillman *et al*., 2014). Additionally, purposive sampling has no randomness, and the consequence of no randomness leads to a limited perspective and possible bias in the collected data (Groves, 2009; Dillman *et al*., 2014).

Potential biases that may arise from using the purposive sampling technique are selection bias, confirmation bias, and self-selection bias (Groves, 2009). Regarding selection bias, purposive sampling can introduce selection bias if the researcher's criteria for participant selection are not well-defined or if the researcher only includes readily accessible or available participants, as the case would be in this research (Groves, 2009). The researcher must watch for this bias and not only focus on participants who are only in one location where the OEM operates. Confirmation bias occurs when researchers may inadvertently seek out participants who confirm their preconceived ideas or beliefs, resulting in a bias in the collected data and possibly limiting alternative perspectives (Groves, 2009). Lastly, self-selection bias is when participants who volunteer or agree to participate in the study may differ from those who decline to participate, introducing the possibility of self-selection bias (Groves, 2009).

These limitations and potential biases shall be factored into interpreting the results and their impact clearly marked out.

3.6 Data Collection technique and Instrument

A data collection technique is the method or strategy used in research to collect information from participants or sources (Bougie, 2019; Groves, 2009). It is the process by which researchers gather data or observations to answer their research questions or achieve their research objectives (Bougie, 2019; Groves, 2009). A data collection instrument, on the other hand, is the specific tool or instrument utilized within a data collection technique to collect data from participants (Bougie, 2019; Groves, 2009). It is the instrument or tool that is designed and utilized for data collection (Groves, 2009).

This study shall utilize a qualitative data collection technique (Flick, 2017; Sutton & Austin, 2015). The rationale for the selection of qualitative data collection technique is that it enables researchers to extensively explore the experiences, perceptions, and behaviors of individuals within agile teams (Lobe et al., 2020; Flick, 2017; Sutton & Austin, 2015). Revealing in-depth and thorough insights into team members' understanding, implementation, and experience of governance procedures (Sandelowski, 2004). The instrument for qualitative data collection will be semi-structured interviews as they are well-suited for exploring complex topics such as governance practices within agile teams (Adeoye-Olatunde & Olenik, 2021; Roulston & Choi, 2018). They allow for open-ended questioning, enabling participants to provide detailed insights and perspectives (Adeoye-Olatunde & Olenik, 2021; Roulston & Choi, 2018; Ruslin et al., 2022). This method shall help uncover nuances and details that may not emerge in more structured forms of data collection (Roulston & Choi, 2018; Ruslin et al., 2022).

3.7 Population and sample size

The population for this study will consist of entities or units pertinent to the research topic (Eiselen, 2005). In this instance, the population will be as tabulated below.

Table 8: Population and sample size

Population	Description
Agile development team members within the IT startup company, inside the OEM.	The individuals are organized in an agile team and take the roles of business analysts, developers, solution architects, and database administrators.

Population	Description
Agile development team leaders within the IT startup company, inside the OEM.	The individuals that provide leadership and direction in an agile team, in the roles of scrum master, technical lead, and team facilitator.

Regarding the sample size, 20 participants shall be sought in the agile team members group; however, a response rate of 16/20 shall be considered sufficient as per the required confidence level, margin of error, and population size (Bougie, 2019). In the agile team leaders' group, a sample size of 10 shall be chosen, where 7/10 responses shall be considered sufficient.

3.8 Data collection instrument and procedure

The qualitative data and quantitative data shall be collected using a questionnaire with open-ended interview questions (Eiselen, 2005) and survey questions respectively. The questionnaire shall be organized according to the key concepts in this study. Questionnaires were chosen because of the flexibility they afford respondents in their normal workload (Eiselen,2005). The questionnaire shall constitute of the following sections:

Section 1: *Demographic and role information* focuses on the respondent's personal information and role while maintaining anonymity.

Section 2: *Team context*: In this section, the researcher asks questions about the respondents' teams to contextualize their responses.

Section 3: *Leadership style;* this section exposes the impact of leadership style on governance processes and team performance

Section 4: *Organizational culture and job satisfaction*; this section can assist in comprehending the cultural milieu in which agile teams function.

Section 5: *Perception of governance practices* explores the respondents' perceptions of governance practices within their teams.

The first step in the data collection will be to find a sample of 20 respondents in diverse roles within the startup. Once the respondents have given their consent to participate, they will be allowed to complete the questionnaire independently or in an interview. In case of an interview, the data collector shall schedule a time when each participant is available individually and complete the questionnaire in the online meeting.

3.9 Validity and Reliability Issues

Validity and reliability are essential research considerations to ensure the quality and credibility of the findings (Golafshani, 2003). This study's validity and reliability considerations are discussed below. In terms of validity, there is internal validity and external validity (Golafshani, 2003).

3.9.1 Internal validity

Internal validity refers to the extent to which the study measures the intended variables accurately and establishes a causal relationship (Soiferman, 2010). To address questions of internal validity, identify and control potential confounding variables and use valid and reliable measurement tools (Soiferman, 2010).

Identification and control of potential confounding variables is the identification and control for potential confounding variables that could affect the relationship between "organizational context and leadership style" and "governance structures and processes and team performance" (Handke et al., 2019). This will involve the application of established scales outlined in Table 9.

Table 9: Established scales and validated questionnaires

Scale	Purpose
Agile Maturity Model (AMM)	The Agile Maturity Model evaluates the level of maturity of agile techniques in a business (Silva et al., 2014). This tool can be used to assess the level of integration and adherence to agile processes among the teams (Silva et al., 2014).
Team Climate Inventory (TCI)	The Team Climate Inventory assesses team climate elements that have the potential to impact team performance, including vision, participatory safety, task orientation, and support for creativity (Houston, 2020).
Organizational Culture Assessment Instrument (OCAI)	The Organizational Culture Assessment Instrument (OCAI) is utilized to evaluate the organizational culture by employing the Competing Values Framework (Ližbetinová et al., 2016). It can assist in comprehending the cultural milieu in which agile teams function (Ližbetinová et al., 2016).

Scale	Purpose
Governance Structures and Processes Questionnaire (GSPQ)	This questionnaire evaluates the efficiency of governance frameworks and procedures inside an organization (Müller & Lecoeuvre, 2014). It is designed to comprehend the special influence of governance on agile teams (Müller & Lecoeuvre, 2014).
Leadership Practices Inventory (LPI)	The LPI quantifies the occurrence rate of distinct leadership actions (Kouzes & Posner, 2002; Wei et al, 2021). This tool is valuable for assessing the methodologies leaders employ in agile teams (Kouzes & Posner, 2002; Wei et al, 2021).
Job Satisfaction Survey (JSS)	The Job Satisfaction Scale (JSS) assesses job satisfaction overall and offers valuable insights into the influence of governance and leadership styles on team members' well-being and contentment (Mustafa et al., 2019).

3.9.2 External validity

External validity refers to the applicability of a study's findings to other contexts or populations (Drisko & Maschi, 2016; Stemler, 2000). To improve external validity, the researcher shall ensure that the sample used in the study is representative of the population of interest (Drisko & Maschi, 2016; Stemler, 2000). In this case, this would entail considering the diversity of product teams and the pertinent demographic characteristics (Drisko & Maschi, 2016; Stemler, 2000). The researcher shall also consider and describe the agile team's specific contextual factors that may impact the generalizability of the findings such as industry characteristics and organizational culture (Drisko & Maschi, 2016; Stemler, 2000).

3.9.3 Reliability

Reliability requires ensuring that the measurement tools and procedures used, produce consistent results over time and across researchers or observers (Rose & Johnson, 2020). Reliability shall be achieved by addressing tests on a small scale, measuring bias and social desirability bias, and recording research procedures (Rose & Johnson, 2020).

Tests on a small scale entail conducting tests on a small scale of the data collection instruments and procedures to identify and address any issues that could affect the data's reliability (Rose

& Johnson, 2020). To control measurement bias and social desirability bias the research shall address the possibility of measurement bias and social desirability bias by carefully designing the research instruments, ensuring the anonymity or confidentiality of responses, and encouraging participants to provide honest and unbiased feedback (Bougie, 2019). The researcher shall also document the data collection and analysis procedures to comprehensively ensure the study's transparency and reproducibility (Bougie, 2019).

3.10 Data Analysis

Since the data that will be collected will be qualitative in nature, the data analysis will entail the examination and interpretation of nonnumerical data to derive meaningful insights and comprehension (Rose & Johnson, 2020). As new data is encountered, qualitative data analysis necessitates a flexible and iterative approach that permits the exploration of new insights and adjustments to the analysis process. This study follows a three-step data analysis approach (Bougie, 2019), which includes data reduction, data display, and generating conclusions. Data reduction; choosing themes, coding, and categorizing data, data display; methods of displaying data, tables, or figures, as mentioned in the following section, and extracting inferences from the data. However, it should be highlighted that qualitative data processing is an iterative process rather than a straightforward linear one (Bougie, 2019)(Golafshani, 2003). The three steps above can be expanded as follows:

3.10.1 Data Preparations

Data preparation entails transcribing or organizing qualitative data collected through interviews, focus groups, observations, or document analysis (Bougie, 2019). This will entail transcribing audio recordings, organizing field notes, or digitizing textual data.

3.10.2 Data familiarization

Data familiarization is when a researcher immerses himself in the data by reading and rereading the transcripts or textual data to acquire a thorough understanding of the content and context (Bougie, 2019).

3.10.3 Coding

During coding, a researcher assigns descriptive labels or codes to various data segments according to themes, concepts, or patterns (Elliott, 2018). This procedure involves identifying significant units of analysis and coding them (Elliott, 2018). Codes will be predefined by the

research questions or can emerge from the data themselves (inductive coding) (Elliott, 2018). This study may include adaptability and flexibility, balancing autonomy and control, communication and collaboration, decision-making processes, organizational culture and leadership, quality assurance, risk management, and stakeholder engagement (Bougie, 2019).

3.10.4 Analysis

It takes the form of analysis of coded data to identify recurring patterns or themes (Graue, 2015). Themes are overarching concepts or ideas that emerge from the data and shed light on the objectives of the research (Bougie, 2019; Graue, 2015). These themes may relate to navigating governance processes in agile software development teams (Bougie, 2019).

3.10.5 Grouping of themes

The themes shall further be grouped to aid the exploration of the relationships between the themes and subthemes that have been identified (Bougie, 2019; Graue, 2015). Additionally, it is important to examine the data for correlations, patterns, or deviations to better understand the investigated phenomenon (Bougie, 2019; Graue, 2015).

3.10.6 Interpretation and Synthesis

This step will analyze the relationships between themes by drawing connections and interpreting the text (Bougie, 2019; Graue, 2015). Contrasting the results with existing theories, literature, or frameworks will also be done as part of the synthesis (Bougie, 2019; Graue, 2015). Additionally, integrating qualitative data into a narrative that addresses the research objectives and questions is completed (Bougie, 2019; Graue, 2015).

3.10.7 Validity and Reliability

Validity and reliability of data shall be done to ensure rigor and credibility in qualitative data analysis by using member checking and maintaining an audit trail (Golafshani, 2003) (Bougie, 2019).

3.10.8 Reporting

The results will be presented coherently and structuredly, using quotations, narratives, or visual displays to support the interpretation (Bougie, 2019). The report shall include the analysis process in detail, including the codes and themes developed (Bougie, 2019).

3.11 Ethical Considerations

It is imperative to address the following ethical considerations to protect the participants and maintain the validity of the study (Goodwin et al, 2020).

3.11.1 Participant Consent

The consent must clarify the objective of the research, the nature of their participation, and any potential risks and benefits (Klykken, 2022). The researcher shall obtain informed consent from all study participants before collecting information from the participants (Klykken, 2022). The researcher shall make accommodations to allow potential participants to decline participation or withdraw from the study at any time with no negative repercussions (Klykken, 2022).

3.11.2 Confidentiality and Anonymity

Confidentiality and anonymity serve the objectives of protecting participant privacy, encouraging truthful responses, upholding ethical standards, ensuring data quality, complying with legal requirements, building trust, and protecting participants from potential harm or discrimination (Gibson et al., 2013). Thus, the researcher will ensure the confidentiality and anonymity of the information provided by participants (Kamanzi & Romania, 2019; Gibson et al., 2013). To achieve anonymity, pseudonyms or codes that conceal the identities of individuals and organizations when handling all collected information should be used to securely store data and restrict access to only authorized researchers to ensure anonymity (Lancaster, 2017) (Gibson et al, 2013).

3.11.3 Data Protection

The chosen IT startup company, inside the OEM values compliance with applicable data protection and privacy laws, regulations, and recommendations (Makulilo, 2012; De Bruyn, 2014; Daigle, 2014). Therefore, the researcher will obtain the necessary permissions or approvals to collect, store, and analyze data, for all data obtained from its employees (Makulilo, 2012; De Bruyn, 2014; Daigle, 2014). The researcher will also ensure that measures are in place to maintain data accuracy, integrity, and security (Makulilo, 2012; De Bruyn, 2014; Daigle, 2014)

3.11.4 Avoid Harm

In the chosen IT startup company, inside the OEM workplace, the well-being of employees is of paramount importance, therefore the researcher will take precautions to protect participants from harm by ensuring that neither the research process nor the data collection methods cause participants any physical, psychological, or emotional harm (Webster et al, 2013). Research questions and topics shall be screened for sensitivity, to limit any potential harm, and have ready necessary support or referral services should they be required in due course (Dixon & Quirke, 2018).

3.11.5 Integrity and Transparency

Integrity and transparency are essential in research as they ensure the reliability of research output. In upholding integrity and transparency, the researcher shall conduct the research honestly by communicating the study's objective, scope, and limitations to participants, stakeholders, and the research community and additionally, reporting the findings of the research accurately and objectively while avoiding any data manipulation or distortion (Tripp, 2018; Moors, 2019). Where applicable, the researcher shall also disclose, acknowledge, and address any conflict of interest (Mecca, 2015)

3.11.6 Institutional Review

Institutional review and ethics committees assist researchers with the awareness and implementation of ethical measures during applied research governed by ethical guidelines and standards (Wits University, 2023). The researcher shall seek ethical approval from the appropriate institutional review boards or ethics committees as part of applied research (Wits University, 2023). The researcher shall ensure adherence to the institution's ethical guidelines and standards and be able to provide the necessary documentation and assurances of ethical compliance when requested (Wits University, 2023).

3.11.7 Inclusion and Diversity

Observing inclusion and diversity when selecting a participant sample helps with the coverage of the research (Mertens, 2018). Therefore, the researcher should ensure inclusion and diversity in participant selection, data collection, and analysis (Mertens, 2018). The researcher will also avoid discrimination, prejudice, and exclusion based on gender, race, ethnicity, age, or

socioeconomic status while striving to provide equitable representation and treatment to all participants (Mertens, 2018).

3.11.8 Intellectual Property

Intellectual property refers to the rights of others, including copyright, patents, and trademarks (Bently et al, 2022). In this study, the researchers will find themselves in a position where the work of others is relied upon to derive understanding and knowledge, such as using existing literature, data, or the intellectual contributions of others (Bently et al, 2022). In respect of the rights of others, the researcher will adequately attribute and cite sources (Bently et al, 2022).

3.11.9 Professional standards

The researcher shall maintain professional standards and codes of conduct throughout the research process (Weckert & Lucas, 2013). This will include professionalism, honesty, and courtesy in all interactions with participants, coworkers, and other stakeholders (Weckert & Lucas, 2013).

Chapter 4. Results

4.1 Results Introduction

This section outlines the results from 20 interviews seeking to tackle the sub-objectives: (i) To examine the current governance practices employed by agile teams of software development organizations within an OEM environment in South Africa, focusing on aspects such as decision-making processes, team climate, emotional aspects of leadership, and team interactions; (ii) To identify the key challenges and opportunities faced by software development organizations in implementing effective governance practices, considering factors such as leadership styles and organizational culture; and (iii) To recommend best practices and strategies for enhancing governance practices in software development organizations, based on the findings of the case studies and an analysis of industry trends and standards.

The 20 participants were in Agile software development teams, and their roles included scrum master, product owner, solution architect, software developer, business analyst, and team manager.

4.2 Results related to agile software development team context

This section presents results related to the team context, entailing participant role information, work experience, exposure to agile software development methodologies, team composition, project types and complexity, and work arrangement. Figure 3 The chart depicts the participants' roles composition, showing the dominance of software developer roles. This is because the IT Startup is a software development organization, where the core role is software development.

Figure 4 depicts the number of years of experience the participants have in the software development environment. 10/21 are in the early career stages, 9/21 in the middle career stage, and 2/21 in the expert stage. The IT Start-up in the case study had existed for 5 years at the time of this research; thus, it primarily consists of a high percentage of those in the early career stage. At its inception, it prioritized unemployed graduates with IT qualifications. Figure 5 depicts the agile frameworks the participants are familiar with; Scrum and Kanban were found

to be the most familiar. The IT startup currently combines Scrum and Kanban – thus, all participants must have at least been exposed to either one during their time in the organization.

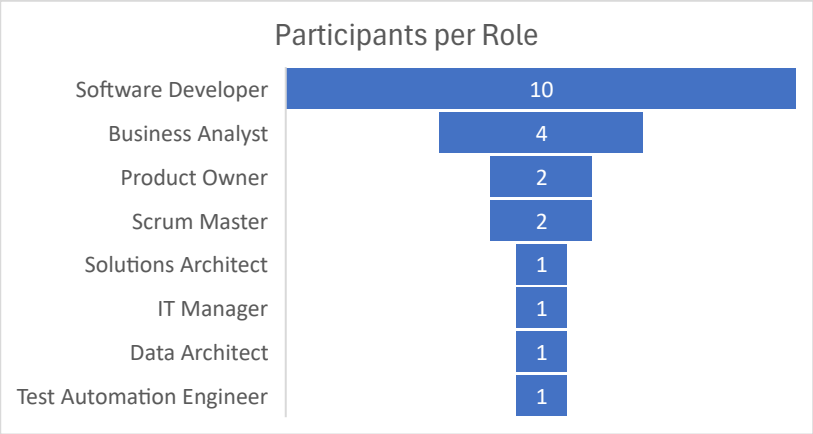

Figure 3: Team context results: Participants per role

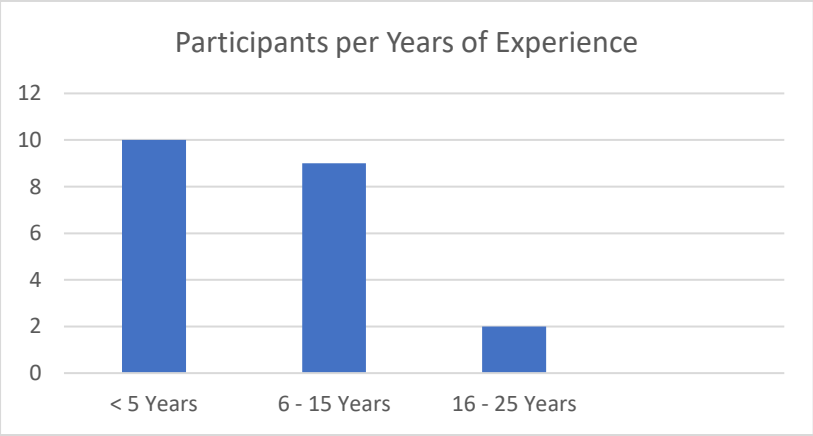

Figure 4: Team context results: Participants per years of experience

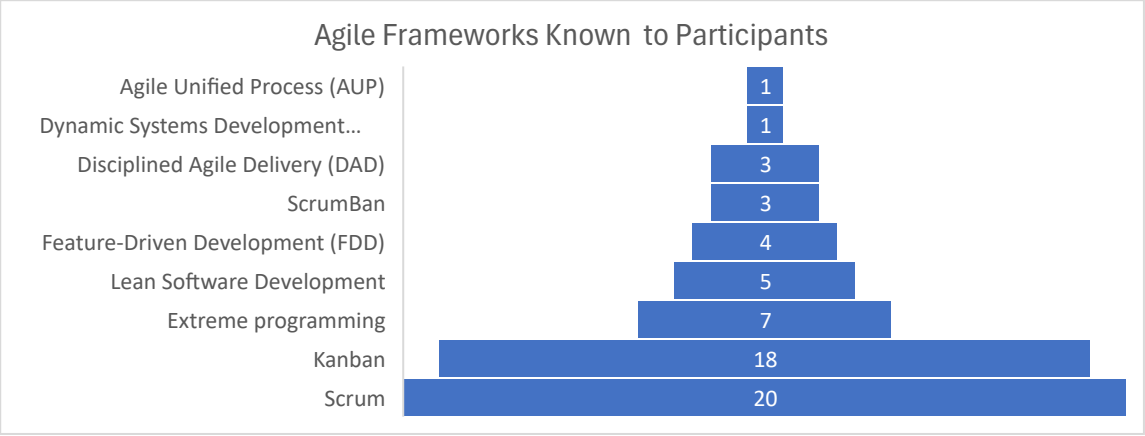

Figure 5: Team context results - Agile frameworks that are known to participants

Figure 6, depicts the team size among participants, with 14/21 participants belonging to a team of 5 – 10 members, 4/21 to a team of less than 5 members, 2/21 to a team of 11 – 16 members, and 1/21 belonging to a team of greater the 16 members. Figure 7 presents the roles that constitute the team to which each respondent belongs. The biggest proportion of the participants are in teams with 5 – 10 members, as they take after the team model recommended by either Scrum or Kanban. Scrum and Kanban recommend a team of 5 – 10 members (Baleviciute, 2016). Each team has a developer, and a few teams have a test analyst. The scrum master and product owner roles, which are responsible for steering the team, are available in most teams. Figure 8 depicts the project complexities per participant, which indicates that 95% of participants worked on high—and medium-complexity projects, distributed equally between high—and medium-complexity projects. The project's complexity resonates with the typical project presented in Figure 9. The participants typically work on projects involving departmental applications, business process support, business administration, and process automation.

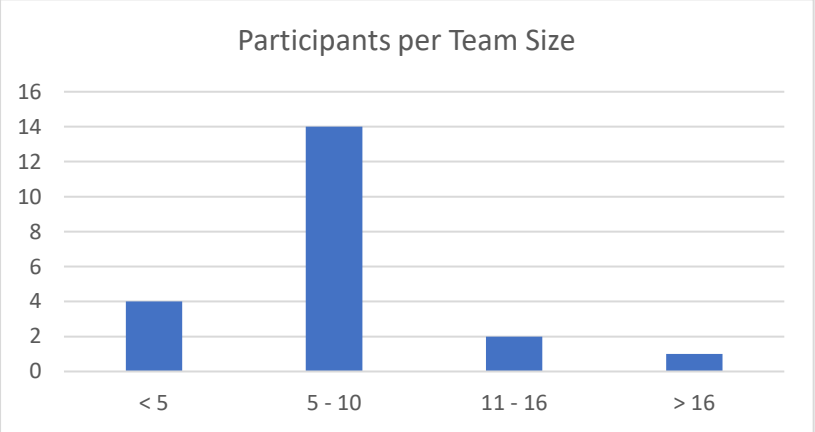

Figure 6: Team context results - Participants per team size

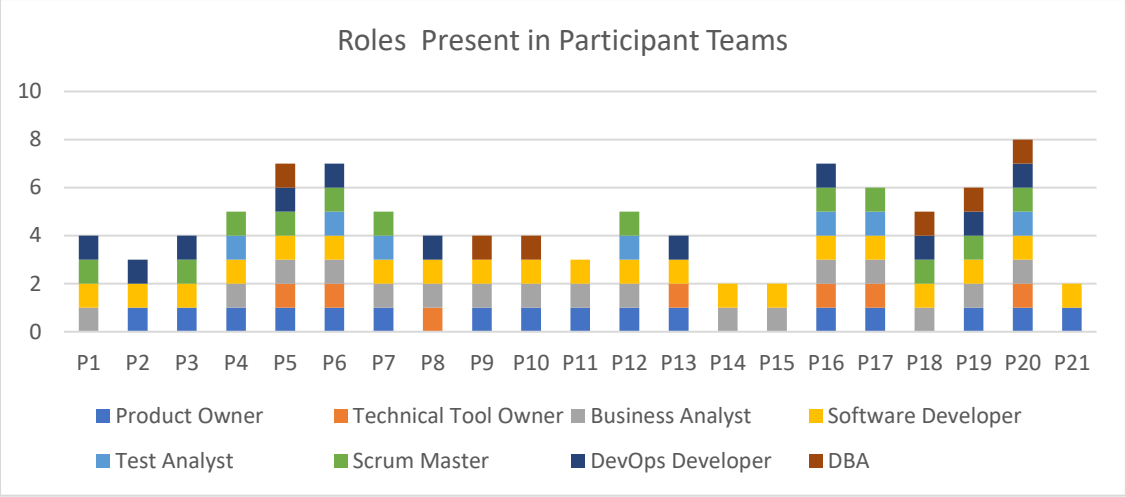

Figure 7: Team context results - Roles present per participant teams

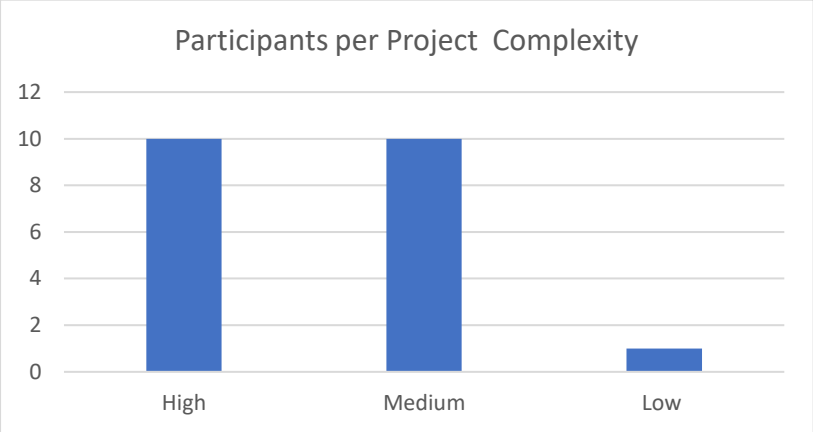

Figure 8: Team context results - Participants per project complexity

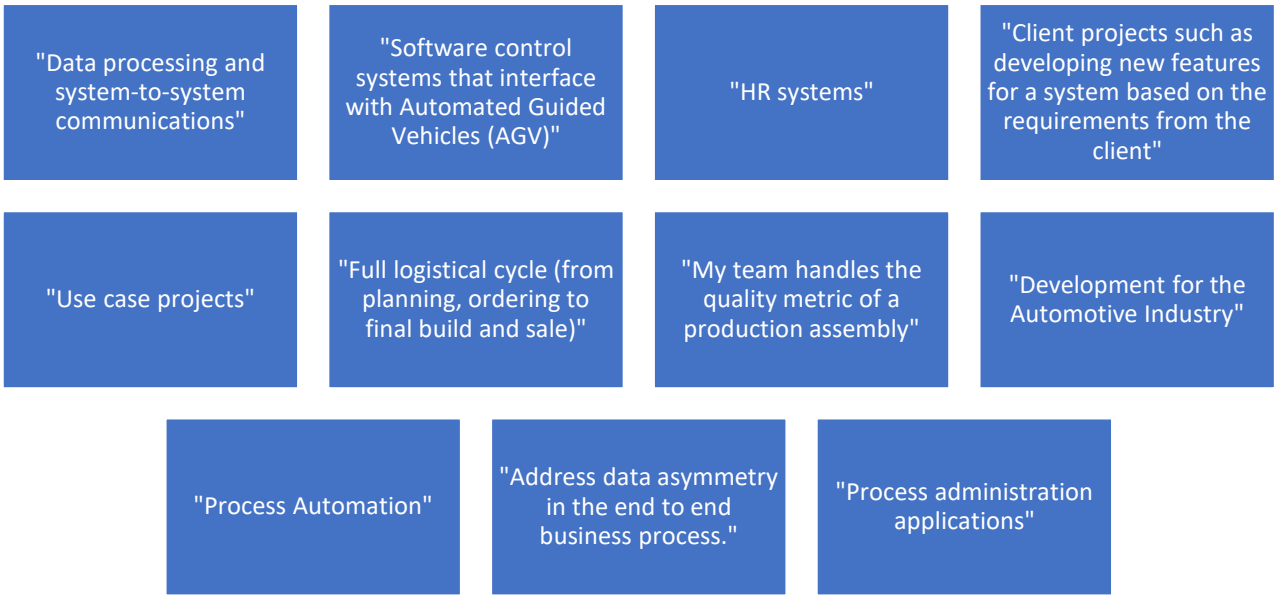

Figure 9: Team context results - Typical agile software projects

Figure 10, The table depicts the number of participants working either on-site, remotely, or hybrid. The result indicates that 52% of the participants work in hybrid mode, 28% in remote mode, and 14 % in onsite mode. In this case, the IT start-up has satellite offices nationwide; thus, although the team members are distributed nationally, a high percentage of them can accomplish hybrid work mode.

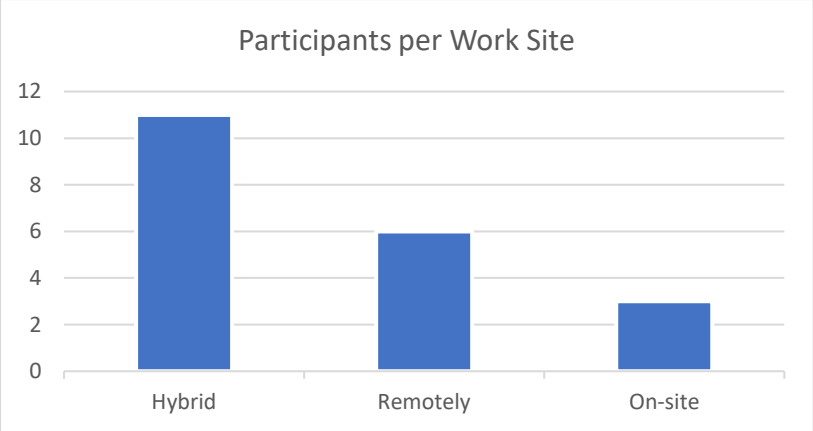

Figure 10: Team context results - Participants per work site

4.3 Results related to the objectives of the study

4.3.1 Sub-objective 1: To examine the current governance practices employed by agile teams of software development organizations within an Original Equipment Manufacturer (OEM) environment in South Africa, focusing on aspects such as decision-making processes, team climate, emotional aspects of leadership, and team interactions

A team environment encompasses a team's collective beliefs and attitudes, including factors such as active involvement, encouragement of new ideas, and shared team goals. An optimistic team atmosphere is crucial for cultivating cooperation, ingenuity, and drive. Examining the relationship between team climate and governance procedures offers valuable insights on how teams can improve their performance and align with the organization's aims.

Leadership is crucial in guiding governance processes. Leaders with strong emotional intelligence can skillfully handle team dynamics, successfully address disagreements, and offer emotional assistance to individual team members. Studying the emotional dimensions of leadership aids in comprehending how leaders can improve governance processes and cultivate a supportive and efficient team atmosphere.

Efficient communication and cooperation are the fundamental principles of agile approaches. Regular team interactions, enabled by meetings and open communication channels, provide transparency and prompt resolution of concerns. Examining the mechanisms that regulate these relationships offers valuable insights for enhancing team unity and productivity.

4.3.1.1 Team member participation in decision-making processes

How do team members participate in decision-making processes?

Team members are invited to participate in the decision-making processes as outlined in the table below.

Table 10: Decision-making participation method

Decision-making process participation	No. participants
Team members are invited to share their opinions during regular team meetings	12
Team members participate in brainstorming sessions to generate ideas and solutions.	6
Team members provide input through surveys or feedback forms	4
Decisions are made through collaborative tools and platforms that allow for real-time input	4
Decisions are made collectively through consensus-building exercises	4
Decisions are made by a designated leader or manager after consulting with team members.	4
Decisions are made using a voting system where each member has an equal say	3

Decision-making process participation	No. participants
Team members are involved in decision-making through ad-hoc committees or task forces	3
Decisions are made based on the feedback and recommendations from cross-functional teams or departments	2
Team members participate in decision-making by providing expert advice and insights in their areas of expertise	1
Decisions are made using a voting system where each member has an equal say	1

Researcher comments

Inspired by agile methodologies, most teams expressed that each team member is invited to share their input into decisions, as is the case in work estimation; team members work collaboratively to reach a consensus on how long it would take to complete a task and the approach to solve it.

4.3.1.2 Team Climate

Can you describe how the team supports innovative ideas?

The interviews revealed robust backing for innovation across teams, as most of the participants concurred that their work environment fosters imaginative thinking and trial-and-error.

> Participant 1: "There are a few community forums where team members participate and make decisions on innovations like Coffee Pot, SA Developer Community, etc"
>
> Participant 2: "The ideas are collaborated, and decisions are made on the value of the outcome. (Value, not necessarily monetary, can be linked to making the system easier to use)"
>
> Participant 3: "The team would go on an exploratory phase of building a PoC for the project to ascertain its viability."
>
> Participant 4: "We have regular knowledge-sharing sessions where team members present their innovative ideas and the progress they've made. This helps us learn from each other and build on existing ideas to create something even better."

> Participant 5: “Our team embraces a culture of calculated risk-taking. We are encouraged to try new things, even if they might fail. This culture reduces the fear of failure and promotes a mindset of innovation.”

Researcher comments

A supportive and innovative environment is characterized by a culture of calculated risk-taking, regular knowledge-sharing sessions, exploratory PoC periods, collaborative decision-making based on practical value, and community forums.

What is the shared vision for the team, and how is it communicated by your leader?

The interview data shows that 60% of the participants believed that their team had a distinct and common vision, which was effectively communicated by their leaders. The rest expressed that their team vision was unknown to them or under construction.

> Participant 1: “We have a team charter, which we drafted with the team and presented to the leader.”
>
> Participant 2: “Build products that are from RSA to the world.”
>
> Participant 3: “The shared vision is that everyone should respect each other and offer help to others who are struggling. That is communicated by the leader by themselves setting an example.”
>
> Participant 4: “Support the business in their processes, but still making sure that the system is not over-complicated. And always making sure that legal requirements are met.”
>
> Participant 5: “Build applications that are robust. with low downtimes and support for a business process. The team vision is reiterated at team meetings.”

Researcher comments

The participants' replies demonstrate the many yet cohesive methods in which shared visions are produced and conveyed within agile teams. Collaborative methods such as developing team charters, ambitious goals such as building internationally influential products, cultivating a culture of respect and support, balancing simplicity with compliance, and ensuring application robustness are all critical components. Leaders are important in embodying and reinforcing

these ideals, ensuring the team remains focused, cohesive, and motivated to achieve common goals. Participant 2 highlights a broad and ambitious vision of creating products for a global market. This vision motivates the team to look above local restrictions and strive for international standards of excellence. A forward-thinking and expansive vision may fuel innovation and motivate the team to pursue high-quality results with a global effect.

4.3.1.3 Emotional aspects of Leadership and team interactions

How do you feel emotionally supported by your leader during challenging projects?

The significance of leaders' emotional intelligence exhibiting qualities such as empathy, active listening, and successful dispute resolution in ensuring good governance was emphasized.

> Participant 1: “By being allowed to express my emotional state and given the right tools and support to thrive in the challenging projects.”
>
> Participant 2: “Personally, I think a leader or manager should support more physically during challenging projects and not leave the team on their own as they could feel isolated and not supported. A manager should always listen and offer reassurance to the team.”
>
> Participant 3: “I feel my leader has high emotional intelligence. They are good at reading the team's mood and provide the right kind of support, whether it's a pep talk or giving us some space when needed.”
>
> Participant 4: “My leader has an open-door policy, which makes a big difference. I know I can go to them with any concerns or issues, and they will listen and provide support without judgment.”
>
> Participant 5: “My leader shows a lot of empathy and understanding. When things get tough, they acknowledge the difficulty and provide reassurance. This makes me feel valued and understood, which is important.”

However, there were also outlying responses, where the participants expressed that their leaders did not offer emotional support, making up 10% of the participants.

> Participant 8: “Our leader is results-driven and pays little attention to emotional well-being”
>
> Participant 9: “My leader does not offer emotional support.”

Researcher comments

Leaders can emotionally support their teams during difficult assignments in various ways. Key practices include encouraging open communication, providing practical and physical assistance, demonstrating strong emotional intelligence, keeping an open-door policy, and demonstrating empathy and understanding. Effective emotional support from leaders boosts team morale and improves overall performance and resilience in the face of adversity.

In what ways do you think your leader's emotional intelligence impacts team dynamics?

The interviews revealed that a leader's emotional intelligence cultivates trust and efficient conflict resolution, leading to a functional team.

> Participant 1: "It contributes to how quickly conflict within a team is resolved. It also helps create better awareness in terms of team morale."
>
> Participant 2: "Our leader's emotional intelligence encourages innovation by making us feel safe to take risks and propose new ideas. They provide constructive feedback in a way that fosters creativity and improvement."
>
> Participant 3: "It boosts the team morale; everyone feels equally valuable as the leader is able to read team cues."
>
> Participant 4: "The leader's emotional intelligence builds trust and respect within the team. We know that our leader will handle situations thoughtfully and considerately, which strengthens our trust in their decisions and leadership."
>
> Participant 5: "He does not take criticism personally but rather understands that it is constructive and is for the betterment of the colleague."

Researcher comments

Leaders with emotional intelligence foster a psychologically secure workplace that stimulates risk-taking and innovation, offers constructive feedback, and handles criticism constructively.

How do team members express their emotions, and how are these emotions managed by your leader?

In most teams, there are open channels for expressing emotions, and the leader is receptive. As depicted in Figure 11, the participants selected a mix of the responses below, with the response

"Team members express emotions openly, and the leader addresses them with empathy and support" being the most frequent.

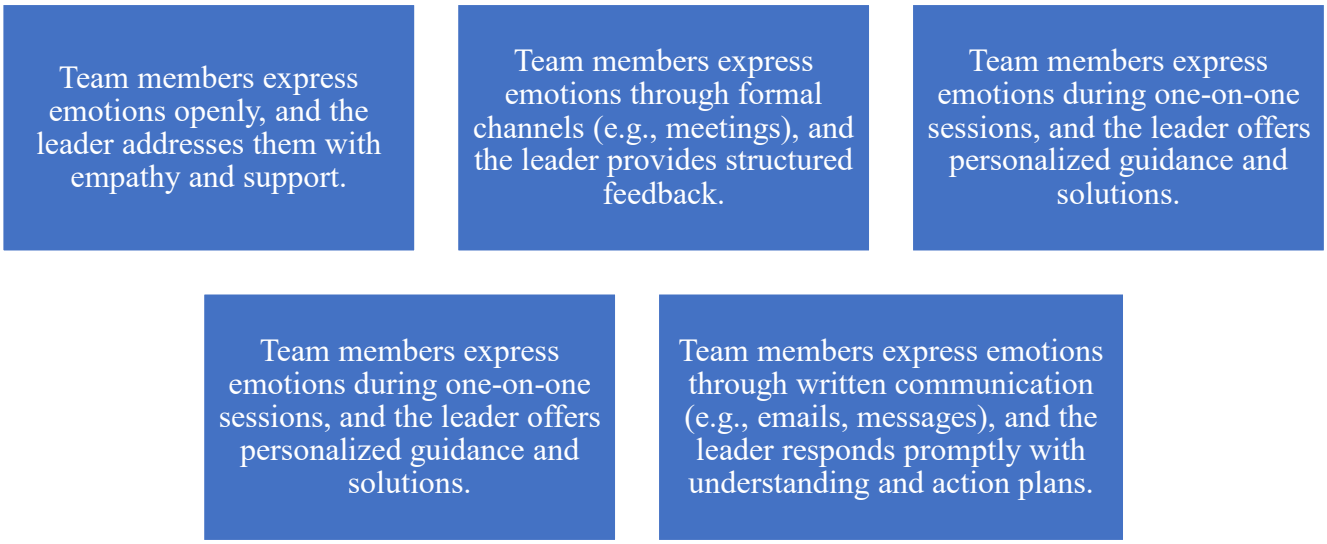

Figure 11: Different ways that team members express emotions

Researcher comments

The responses underscore the importance of open emotional expression and empathetic leadership in agile teams, which are a bedrock for transparent communication and enhanced collaboration.

4.3.1.4 Leadership Practices

How does your leader set an example for the team?

The participant expressed that their leaders were exemplary in that they lived according to the company's values and principles.

> Participant 1: "He encourages a flat structure, showing mutual respect in all interactions."
>
> Participant 2: "Structured workdays. focus blocks in the morning, meetings are asynchronous as possible."
>
> Participant 3: "Work hard and not point fingers"
>
> Participant 4: "By doing and not just being vocal."

Participant 5: “Our leader is incredibly passionate about our projects and the company’s mission. Their enthusiasm is infectious and excites us to work every day. Seeing their passion reminds us of why we love what we do.”

Researcher comments

These leadership strategies, whether they promote a flat organization, build regular and productive work routines, represent hard effort and accountability, lead by action, or demonstrate infectious energy and excitement, all play an important role in molding team relationships and culture. Leaders inspire and encourage their teams by demonstrating the behaviours and attitudes they want to see, establishing a culture of mutual respect, productivity, accountability, and shared purpose.

Can you describe how your leader challenges the team to achieve higher standards?

The interviews revealed that those in leadership roles in agile software development teams relentlessly push for higher standards anchored on setting achievable goals. “By setting ambitious yet achievable goals and providing the necessary resources to meet them” was more frequent among the behaviours in Figure 12.

Figure 12: Different ways a leader challenges the team to achieve higher standards

Researcher comments

The insights from the interviews underscore the importance of balanced goal-setting and resource provision in achieving these outcomes. This approach ensures that teams are constantly challenged and supported, leading to sustained motivation, high performance, and alignment with organizational objectives. The leader comes across as a servant leader, as advocated by agile values and principles.

How does your leader foster collaboration among team members?

The participants agreed that daily stand-ups and sprint reviews are important for ensuring effective communication and timely resolution of concerns. Frequent encounters and transparent communication also promote a cooperative atmosphere where everyone feels acknowledged and appreciated.

> Participant 1: "He proactively addresses conflicts and fosters a positive team dynamic. He mediates disputes and encourages constructive dialogue, ensuring that any issues are resolved quickly and collaboratively, which helps maintain a harmonious working environment."
>
> Participant 2: "Allowing for stand-ups and ad-hoc team meetings"
>
> Participant 3: "Provide platforms for sharing ideas and sharing experiences in areas. Allow cross-skilling in areas"
>
> Participant 4: "By having open discussions in team meetings and sharing ideas between team members"
>
> Participant 5: "By ensuring the team sync occurs daily, and other sprint events occur as planned."
>
> Participant 6: "She recognizes and rewards collaborative efforts. While highlighting successful teamwork during meetings and providing incentives for team-based achievements. This recognition motivates us to work together and achieve common goals."

Researcher comments

The participants' answers provide a whole strategy for encouraging teamwork inside agile teams. Important tactics are proactive dispute resolution, frequent and ad hoc meetings, platforms for idea exchange, open communication, daily synchronizing, and appreciation of group efforts. Essential for the success of agile initiatives, these methods guarantee constant communication, mutual support, and a strong team dynamic.

4.3.2 Sub-objective 2: To identify the key challenges and opportunities faced by software development organizations in implementing effective governance practices, considering factors such as leadership styles and organizational culture

4.3.2.1 Leadership Styles

Can you provide an example of how your leader motivates and inspires the team?

The findings suggest that leaders in agile software development teams inspire and motivate their team members by recognizing their efforts, helping them, empowering them, and creating a good and inventive work atmosphere.

> Participant 1: "Having two meetings where the whole team meets and some one-on-one meetings where individual needs gets an attention"
>
> Participant 2: "He motivates us to think creatively and generate inventive solutions. He frequently arranges brainstorming sessions that encourage us to share even the most unconventional ideas, fostering a sense of appreciation and motivation to contribute in a creative manner."
>
> Participant 3: "By being an example to the team following best practices, by treating everyone equally from Junior to Senior, by sharing knowledge across the team and work life balance."
>
> Participant 4: "She ensures that we are provided with all the necessary resources to perform our tasks efficiently. When confronted with a technical obstacle, she promptly organized supplementary training and enlisted the assistance of an expert, demonstrating her genuine concern for our professional development"
>
> Participant 5: "Our leader drives cohesion within the time by keeping the team focused on a common goal. He is ambitious in his own work, and that inspires the team to perform"

Researcher comments

These answers underline the need for a comprehensive approach to leadership that meets communal and personal needs, fosters innovation, sets high expectations, and offers relentless support—that which is necessary for both.

How does your leader encourage innovation and creativity within the team?

The findings suggest that leaders foster innovation and creativity in their agile software development teams by establishing a nurturing, inclusive, and cooperative atmosphere, granting independence and resources for trial and error, establishing ambitious objectives, and

acknowledging and compensating inventive endeavours. 1/20 participants expressed that the leader is “Not actively encouraging innovation and creativity”, Figure 13 depicts the rest of the uniform responses.

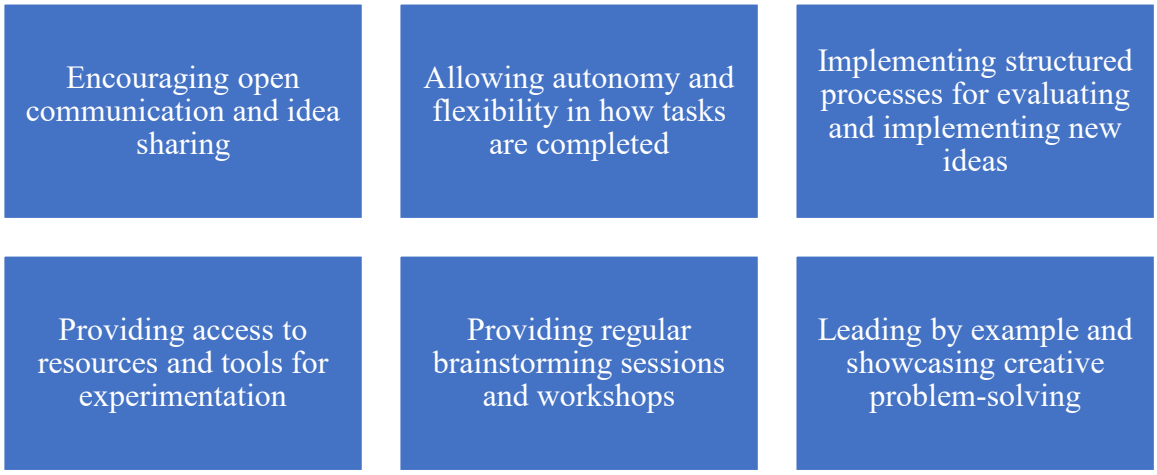

Figure 13: Ways that encourage innovation and creativity within the team

Researcher comments

Open communication, offering autonomy, applying methodical evaluation techniques, funding for experimentation, team brainstorming sessions, and team leader model behavior are many ways to inspire innovation and creativity inside the team. Those who use these strategies show their dedication to appreciating and supporting their team's creativity and performance, fostering better involvement, contentment, and output.

How does your leader reward or recognize team members for their performance?

As depicted in Figure 14, the results suggest that leaders employ several strategies to reward and acknowledge team members, encompassing public recognition, specific commendation, financial incentives, career advancement prospects, and flexible work schedules.

Figure 14: Ways that a leader rewards team members for their performance

Researcher comments

Different types of achievements are also recognized differently depending on whether they are individual—or team-oriented, stretch goals, or just part of the core job, and the overall value delivered. These approaches demonstrate a commitment to nurturing and valuing the team's effort.

Can you describe a situation where your leader intervened to address a problem?

The responses indicate that competent leaders employ diverse approaches to tackle issues, such as resolving conflicts, allocating resources, setting strategic goals, managing customers and stakeholders, boosting team morale, utilizing technical knowledge, enhancing processes, handling crises, and offering mentorship.

> Participant 1: "Currently busy with a software rewrite, where developers were not privy to system design. we were only given a functional architecture diagram. Our leader intervened and questioned the use cases of the functional diagram and made concessions that our team needs to be involved in system design."
>
> Participant 2: "When our project ran over unanticipated technological difficulties, our leader called a brainstorming session. They helped us to investigate other approaches and modify our project schedule. This interaction kept us motivated and attentive, which finally produced a good result."
>
> Participant 3: "Yes. We were running behind schedule to deliver a project that had sketchy requirements. Our leader played a multi-faceted role in bridging the gap

between requirements refinement and designing the technical architecture for the solution."

Participant 4: "We experienced a major system outage that disrupted our operations. Our leader managed the crisis by coordinating a swift response, communicating transparently with stakeholders, and ensuring we had the necessary support to restore services quickly. Their calm and organized approach was crucial in resolving the issue."

Participant 5: "There was poor communication and no clear expectations set between developers and business analysts. The leader then invited both parties into a discussion to understand the root cause once that was clear. The leader facilitated an expectation-setting session that has since resolved the misalignment."

Researcher comments

The leaders in the IT startup case study are part of a team; when issues occur, they quickly become aware and respond with agility. Regarding project-related issues, the broad spectrum of typical projects means that some projects may be time-sensitive, especially if they intend to address regulatory findings. They could also be supporting production support. In this case, the leader's timely intervention is critical. The responses also describe the various ways that leaders intervene beyond project work.

In what ways does your leader give the team autonomy to make decisions?

As depicted in Figure 15, the responses indicate that leaders empower their teams through the delegation of authority, promotion of independent problem-solving, establishment of clear yet adaptable goals, provision of supportive guidance without excessive control, cultivation of a culture of trust, implementation of regular check-ins, encouragement of risk-taking, facilitation of cross-functional collaboration, and guaranteeing access to resources and information.

Figure 15: Ways that a leader gives the team autonomy to make decisions

Researcher comments

The autonomy to make decisions can be realized through either one of the ways expressed in the responses - in essence, leading to team members who feel valued, trusted, and capable, leading to higher motivation and innovation.

4.3.2.2 Organizational Culture

How would you describe the organizational culture here? Is it more like a family (Clan), entrepreneurial (Adhocracy), competitive (Market), or structured (Hierarchy)?

According to the participants, organizational culture combines structured, family, entrepreneurial, and competitive elements. The family culture was selected most, followed by structured culture, as depicted in Figure 16 .

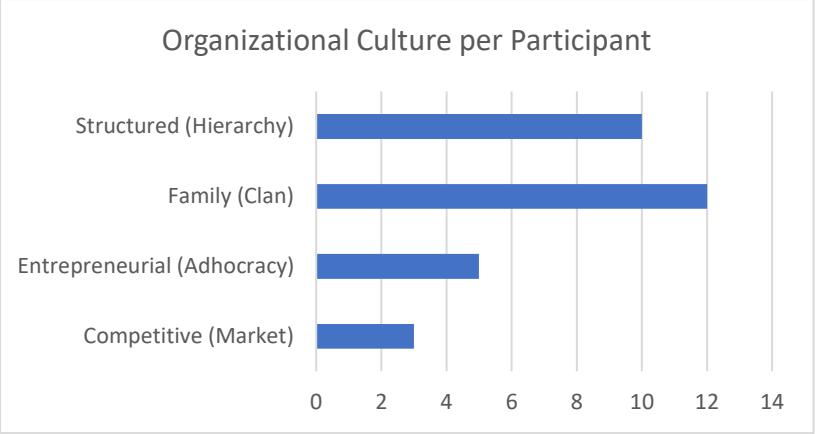

Figure 16: Perceived organizational culture per participant.

Researcher comments

The family culture was a dominant response, possibly due to the startup being in its infancy and work-life integration. Work-life integration is characterized by personal relationships and holistic support. Team members often spend long hours together, sharing successes and setbacks, which can foster deep personal relationships. There is also a strong advocacy for work-life balance and personal well-being, recognizing that personal satisfaction is critical to maintaining motivation and productivity.

How does the organizational culture influence the way governance processes are implemented in your team?

Several participants observed that corporate culture, whether collaborative, hierarchical, or innovative, impacts the execution of governance processes.

> Participant 1: "Attention is paid to ensuring governance processes don't impede the speed of execution."
>
> Participant 2: "Our organizational culture is meant to foster collaboration and support among team members through governance mechanisms. We provide explicit instructions while also promoting collaboration among team members to facilitate the understanding and implementation of these procedures, thereby cultivating a constructive work atmosphere."
>
> Participant 3: "Governance processes are implemented in ways that are common to other interlinked processes."

Participant 4: “Our organizational culture exhibits a notable degree of resistance towards change, which hampers the successful adoption of new governance mechanisms. Introducing new practices might be difficult due to a tendency to favor familiar and comfortable methods.”

Participant 5: “It calls for the governance processes to be implemented uniformly.”

Researcher comments

The findings emphasize the need to know and match governance mechanisms with the current company culture to ensure their efficacy and adoption. Leaders must carefully negotiate these cultural factors to design governance systems that support and improve team performance while remaining consistent with business goals and objectives.

In what ways does the organizational culture support or hinder your team’s performance?

The participants expressed that organizational culture is crucial in supporting or hindering team performance. The collected data highlighted that cultures prioritizing support, innovation, effective communication, and resource accessibility tend to cultivate high-performing teams. On the other hand, cultures that are resistant to change, too hierarchical, or overly focused on performance might hinder good team functioning.

Participant 1: “Innovative ideas are shot down - so if you stick within the framework, you can dev any nonsense, and it will get deployed to production.”

Participant 2: “It provides a clear way of working in the various teams, thus supporting the teams' performance”

Participant 3: “Here, the performance-driven culture can be two-edged. Although it motivates us to reach great standards, it also generates a lot of strain and stress that occasionally results in burnout.”

Participant 4: “Depending on the level of difference in products that different teams work on, family culture can hinder or support team performance.”

Participant 5: “Lack of enough autonomy is one of the ways the society reduces our performance. Many times, we must follow strict rules and procedures that stifle innovation and slow down our capacity for fast response to changes.”

Researcher comments

The overall sentiment in the responses is that although efficiency and high standards can be facilitated by explicit structures and performance-driven cultures, they can also lead to stress, impede innovation, and diminish autonomy. A family culture may offer collaboration and support, but it can also result in complacency. To maximize team performance, leaders maintain a balance between structure and flexibility, foster innovation, manage stress, and grant autonomy.

4.3.3 Sub-objective 3: To recommend best practices and strategies for enhancing governance practices in software development organizations, based on the findings of the case studies and an analysis of industry trends and standards

4.3.3.1 Governance structures and processes

How are governance processes designed and implemented in your team?

As depicted in Figure 17, the participants shared that governance processes are designed and implemented collaboratively. Unless there is an exception of regulatory requirements or audit findings, they are then implemented top-down.

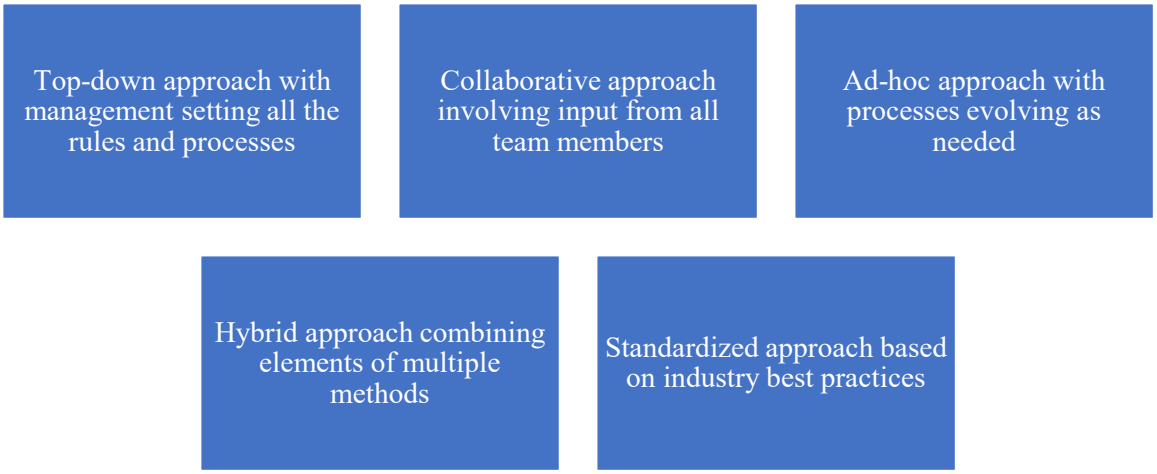

Figure 17: Design and implementation of governance processes within teams

Researcher comments

Collaboration in design cultivates a sense of accountability and ownership among team members, who are actively involved in developing the processes that govern their work. This can result in increased adherence and more effective implementation, as team members are more inclined to commit to processes, they assisted in developing. The importance of adhering to external standards is underscored by the top-down implementation of governance processes, which are primarily driven by regulatory requirements or audit findings. Although this method

guarantees that the team fulfills its legal and regulatory obligations, it may occasionally conflict with the collaborative culture if not executed with precision.

Can you provide an example of a governance process that works particularly well or poorly?

Most teams' governance relies on the agile software development framework; thus, the processes that run on the agile framework were found to work well. However, one size might not fit all teams due to differing team contexts.

> Participant 1: "The templating system doesn't fit all software designs - so this is a poor process"
>
> ***Researcher comment:*** *Participant 1 identifies the templating system's limitations, observing that it is unable to effectively accommodate all software designs. This response underscores the necessity of more adaptable and flexible governance processes to accommodate the diverse needs of various software initiatives. A universal approach may not adequately address complex and diverse design requirements.*
>
> Participant 2: "One of the processes that work well is the security processes to avoid easy hacking of systems"
>
> ***Researcher comment:*** *Participant 2 commends the effectiveness of the security processes, emphasizing their role in preventing easy hacking. This positive feedback indicates that robust security governance is in place, which is crucial for protecting sensitive data and maintaining system integrity. It demonstrates that well-implemented security measures can significantly enhance the overall resilience of software systems.*
>
> Participant 3: "Doing regular demonstrations to the product owner to ensure that expectation is met and aligned."
>
> ***Researcher comment:*** *Participant 3 emphasizes the efficacy of consistent demonstrations to the product owner, which guarantees that expectations are fulfilled and synchronized. This technique promotes continuous communication and feedback, which assists in maintaining the project's progress and ensuring it meets stakeholders' expectations. This highlights the significance of iterative reviews involving stakeholders to maintain alignment and accomplish desired results.*
>
> Participant 4: "Design and development process. The transition process from project mode to run mode works poorly."

Researcher comment: *Participant 4 highlights the challenging aspect of the transition from project mode to run mode. This reaction implies that deficiencies in the continuity and handover procedures can result in difficulties sustaining project progress and operational steadiness. Addressing these transition difficulties is essential to guaranteeing a smooth integration and consistent performance after the implementation.*

Participant 5: "The software development process works particularly well. The strategic alignment process works poorly because the team's strategic direction has been fluid at times"

Researcher comments: *Participant 5 observes that the software development process is efficient; however, the strategic alignment process has been challenging due to the variable strategic direction. This suggests that, despite the existence of robust operational processes, there are strategic issues that impact the overall coherence and focus. Establishing a distinct and consistent strategic direction to achieve long-term objectives and maintain alignment is imperative.*

Participant 6: "The risk management process works poorly; there's no clear process to raise, manage, or mitigate risks."

Researcher comments: *Participant 6 emphasizes the deficiencies in the risk management process, specifically the absence of explicit procedures for the identification, management, or mitigation of risks. This gap suggests a critical area for development, as effective risk management is essential for identifying and resolving potential issues that could adversely affect the project's success. Establishing explicit and comprehensive risk management protocols is imperative to improving a project's security and resilience.*

How do governance structures support the alignment of team activities with organizational goals?

There is a common understanding that governance structures are intended to provide overall organizational synergy infiltrating agile software development teams.

Participant 1: "It provides a guardrail for team activities, ensuring that team initiatives deliver value at ORG level"

Participant 2: “They provide a boundary for team activities and how the activities are executed.”

Participant 3: “Governance structures enable cross-functional collaboration, which fosters alignment by integrating diverse perspectives and skills. This cooperative method guarantees that team activities are comprehensive and in line with the overall objectives of the business, promoting creativity and cooperation.”

Participant 4: “Governance structures establish standardized processes and procedures to ensure that team activities are in line with company goals. These standards guarantee uniformity and effectiveness, facilitating the coordination of efforts and the attainment of targeted objectives that are in line with the company's mission.”

Participant 5: “Establishing effective communication channels by governance institutions is vital for achieving alignment. Frequent updates and feedback loops guarantee that all individuals are well-informed about the company objectives and how their work aligns with the broader plan.”

Researcher comments

The responses highlight that governance structures are essential in directing team efforts toward the organization's overarching objectives by establishing boundaries, fostering cross-functional collaboration, defining standardized processes, and ensuring effective communication. These procedures guarantee that team activities are consistent with and contribute to the overarching strategic objectives, cooperation, and consistent quality of outputs.

4.4 Summary of the chapter

The results section presented the data collected from the participants in terms of the team context and research objectives. The subsequent chapter analyses and interprets these results.

Chapter 5. Interpretation and Discussion of Results

5.1 Introduction of Interpretation and Discussion of results

This qualitative study explores the intricate aspects of governance procedures within agile software development teams in IT startups in the OEM sector. The research aimed to gain a comprehensive understanding of how elements such as leadership styles, organizational culture, decision-making processes, team climate, and emotional aspects of leadership influence the navigation and effectiveness of governance in agile environments.

The analysis of findings is approached from the perspective of contingency theory, which suggests that the efficacy of managerial strategies depends on the internal and external contexts in which an organization functions. This theoretical framework clearly explains the complex relationship between leadership, culture, and governance practices. It offers useful insights that are important for both professionals and researchers.

In the following sections, the main discoveries of the study, addressing the difficulties and possibilities that were identified in the execution of governance practices, are analysed. The impact of various leadership styles and corporate cultures on these practices and their efficacy are examined. In addition, the discussion will outline the practical applications and recommendations to improve governance frameworks, guaranteeing that they facilitate the adaptability, creativity, and adherence required for success. This analysis seeks to provide a valuable contribution to the wider discussion on agile techniques and organizational governance. It provides practical insights that can be used to enhance governance processes in IT startups.

5.2 Interpretation of Key Findings

This section presents the interpretation of key findings per research objectives.

5.2.1 Agile software development team context

The participants were dominated by software developers because software developers had existed more times than any other role in a single agile software development team. Even in the semi-random selection of participants, software developers are the ones most encountered.

Most early and middle-career participants are likely due to the start-up environment. Trends show that IT start-ups are dominated by younger people and career switchers who are likely to be in their early careers. Most experienced developers prefer established companies as they

provide more stability and have abundant opportunities. The Scrum and Kanban frameworks, being the most popular, align with the overall working experience of the participants since Scrum and Kanban came into prominence in the past decade and have become most used and adopted into other frameworks.

The results of the project complexity show that the number of participants working on high-complexity projects is equal to that of those working on medium-complexity projects. Contrasting this with team sizes, an over- or under-allocation of work within different teams could be inferred.

5.2.2 Current governance practices with a focus on aspects such as decision-making processes, team climate, emotional aspects of leadership, and team interactions

The overall tone of the results is that collaborative decision-making improves decision quality by including a variety of viewpoints and promoting a sense of ownership among team members, which aligns with existing literature (Michie et al., 2006; Owen, 2015; Glette-Iversen et al., 2023; Osibo, 2023). Michie et al. (2006) findings indicate that in addition to collaborative decision-making, when team members have diverse educational and functional backgrounds and decision quality. The results indicate that inclusivity fosters openness and guarantees the inclusion of all perspectives, resulting in more thorough and balanced decision-making, which concurs with Owen (2015). Owen (2015) states that although collaborative decision-making is not intuitive to the parties involved, the result is that the decision is valuable, mutually owned by members, and open to its implementation. In addition, the results imply that leaders must balance inclusivity and efficiency, ensuring that decision-making procedures do not impede growth. This resonates with the findings of Osibo (2023), who states that leaders in adopting inclusivity must ensure that personal development areas are identified for empowered decision-making.

As contingency theory advocates, implementing decision-making frameworks that offer explicit principles while allowing for adaptability is essential (Fiedler, 2015). These frameworks should be created with the ability to adapt to fast changes and evolving project requirements, guaranteeing that decisions are made promptly and based on sound knowledge (Glette-Iversen et al., 2023). The delicate equilibrium between structure and flexibility is crucial for preserving agility while upholding governance requirements (Glette-Iversen et al., 2023).

The results indicate that an optimistic team climate that encourages originality is essential for cultivating ingenuity and propelling ongoing enhancement. Carvajal et al. (2023) state that it is a leader's prerogative to empower and value team members so that such an environment is cultivated. According to the findings, the innovative environment is fostered by regular knowledge-sharing sessions, collaborative problem-solving, and a culture encouraging calculated risk-taking. This finding is corroborated by Olaoye and Potter (2024) in that breaking silo and facilitating open communication contributes to an innovative environment. These findings imply that such a workplace fosters a culture where team members are motivated to explore and test novel ideas and methods, improving their capacity to adjust to evolving project demands and market circumstances. Therefore, the design of governance procedures should facilitate an innovative climate by granting the required autonomy and adaptability for experimentation while ensuring supervision and responsibility.

Effective governance and excellent performance rely heavily on solid team cohesion and morale (Strode et al., 2022). The cooperative character of agile approaches and reciprocal assistance among team members fosters a unified and motivated team atmosphere (Ghani et al., 2019; Abrar, 2019). Implementing governance techniques that promote unity and motivation, such as involving everyone in decision-making and acknowledging the efforts of team members, is likely to yield better results (Ghani et al., 2019; Abrar, 2019). It is imperative to prioritize the sense of value and support among team members to sustain elevated levels of engagement and productivity (Strode et al., 2022).

Another key finding is that leaders' emotional intelligence heavily influences the efficacy of governance practices. Thus, leaders who can understand and share their team members' feelings, actively listen, and effectively address disagreements can establish a supportive and highly productive team environment. Al-Dhuhouri et al., (2020) concurs with these qualities. This emotional support is crucial in agile environments, where frequent changes and high-stress circumstances are prevalent. Liu & Liu (2013) found that Leaders who can adeptly negotiate these dynamics make valuable contributions to fostering a stable and harmonious team, boosting overall governance and team.

Emotional support during challenging projects is a vital element of leadership in agile teams. Ghani et al. (2019) state that leaders who can provide confidence, immediately address concerns, and uphold open communication channels assist team members in navigating challenging circumstances. Abrar (2019) concurs that this assistance improves the team's

ability to bounce back from challenges and maintain high spirits, fostering a pleasant team atmosphere and efficient decision-making. Thus, this implies that leaders should undergo training to identify and address the emotional needs of their team members while ensuring that governance procedures are executed in a helpful and empathic manner.

Another key finding is that frequent engagements, such as daily stand-ups and sprint reviews, foster transparency and guarantee that all team members are in sync with project objectives and governance protocols. Thus, efficient communication is fundamental to agile methodology and governance procedures, Bernat et al. (2023) also stated. According to Bernat et al. (2023), establishing effective communication channels enables prompt identification and settlement of issues, preventing their escalation and disruption to the project. In their studies, Carmeli and Markman (2011) and De Prins et al. (2014) align that effective governance methods prioritizing frequent and open communication foster a unified and efficient team atmosphere. Additionally, governance practices should promote and enable collaboration, offering structures and resources that assist team-oriented problem-solving and decision-making.

5.2.3 Key challenges and opportunities in implementing effective governance practices, considering leadership styles and organizational culture

Leadership styles present a challenge of striking a balance between them to build a governance system that encourages both compliance and innovation. Leaders must be adaptive, changing their strategy to preserve control and flexibility. For example, a leader may need to use a transactional style during critical compliance while transitioning to a transformational style to excite and motivate the team during innovation phases (Modi & Strode, 2020). This challenge gives way to an opportunity to create leadership programs that teach leaders adaptable ways to balance transactional, transformational, and laissez-faire elements. Such programs can assist leaders in learning when to impose rigorous governance constraints and when to allow for greater creative flexibility, resulting in a dynamic and responsive governance environment.

There is also a challenge of cultural resistance to formal governance in that implementing governance systems in firms with diverse cultural norms is authoritarian. This was the case in the study, where the participants from different teams expressed different cultures and perspectives. According to Guerin et al. (2018), authoritarian perception conflicts with cultural practices that value autonomy and flexibility. Thus, this presents an opportunity to implement governance frameworks that must be adaptable and culturally sensitive to be effective—

improving compliance and effectiveness by aligning governance practices with their cultural characteristics, such as incorporating governance into collaborative activities in clan cultures or supporting innovation in adhocracy cultures. A practice that Hofstede (2001) supports.

Another challenge that emerged is balancing innovation with governance, where the governance methods don't hinder innovation. This opens the opportunity to create governance policies that openly encourage innovation. Brunette (2023) states that more effective governance that does not stifle innovation can be achieved by implementing policies that support innovation through flexible processes and encouraging innovative problem-solving. This includes holding regular knowledge-sharing sessions, fostering innovation, and allowing for calibrated risks within the governance framework. Such strategies ensure that innovation is promoted and supported while providing the required monitoring.

In addition, a challenge is to build leaders who can effectively manage team dynamics, especially in emotionally charged or high-pressure situations. Effective governance requires leaders who can negotiate disagreements, give emotional support, and preserve team cohesion anchored on emotional intelligence. Therefore, emotional intelligence training can be included in leadership development programs. Improving leaders' empathy, active listening, and conflict-resolution skills can improve team relationships, promote a supportive team environment, and guarantee that governance principles are adequately adopted and followed. According to Trong Tuan (2012), enhancing leaders' conflict resolution skills ensures that disagreements are managed constructively, maintaining team cohesion and performance

5.2.4 Best practices and strategies for enhancing governance practices in software development organizations

The literature review discovered that effective governance processes for agile software development teams combine systematic planning, execution, and continuous improvement activities to ensure alignment with company goals, compliance, and quality standards (Schwaber & Sutherland, 2011). Sprint planning and reviews are important processes for maintaining focus and stakeholder participation, as are daily stand-ups for communication and issue resolution, retrospectives for continuous improvement, and backlog refinement for task prioritization (Schwaber & Sutherland, 2011; Rising & Janoff, 2000; Rubin, 2013). Pyzdek & Keller (2009), concur that quality assurance and code reviews ensure software reliability, while according to Hillson (2009), risk management, compliance adherence, and change

management prevent interruptions. Metrics and reporting promote transparency and data-driven decision-making, while regular stakeholder involvement ensures expectations are met (Kerzner, 2017; Beck et al., 2001). These practices allow agile teams to balance flexibility and accountability, creating an environment conducive to high performance and innovation.

The results on the roles present in the participant teams suggest a potential for unclear roles and responsibilities as not all teams are staffed with roles indicated by agile methodologies, such as test analyst, scrum master, product owner, and business analyst. This is even more so because the applications developed are split between high and medium complexity. Even under contingency theory, it does not seem justifiable not to have certain roles without introducing an issue of key man dependency. All teams have developers and scrum masters – which could be inferred that the scrum masters could spread too thinly.

When team members are missing, the workload for the remaining team members increases significantly, leading to burnout. They often find themselves burdened with extra tasks, leading to exhaustion and a decline in overall efficiency. Experiencing this additional stress can harm job satisfaction and morale, leading to higher turnover rates as Maslach and Leiter (2008) argue that the additional stress negatively impacts job satisfaction and morale, leading to higher turnover rates as employees seek less stressful work environments. As a result, the overall work quality may suffer as people struggle to juggle various responsibilities, which can harm project timelines and results. Schwaber & Sutherland, 2011 state that the team may take longer to complete tasks due to a lack of specialized skills, delaying project timelines and negatively impacting stakeholder expectations.

Agile teams benefit from a wide range of skills and expertise to effectively manage different aspects of software development. Without essential roles filled, the team might find themselves lacking the expertise and know-how needed to tackle certain tasks with efficiency. Not addressing this gap can result in less-than-ideal solutions, higher error rates, and a longer time to bring products to market. For example, if there isn't a dedicated test analyst, the team may experience lower testing coverage, leading to increased defects in the final product. This significantly impacts the quality of the product and the team's ability to meet deadlines and stakeholder expectations.

The study indicates that adaptive leadership, which balances transformational, transactional, and laissez-faire characteristics, is essential for effective governance in agile organizations. Leaders who can change their leadership styles depending on the occasion are better prepared

to deal with the difficulties of agile governance. Transformational leadership inspires and drives teams, creating a culture of creativity and transformation. Transactional leadership guarantees adherence to governance principles by establishing transparent processes and responsibilities. Laissez-faire leadership promotes liberty and innovation in teams, allowing them to experiment freely. Northouse (2016) states that the capacity to adjust leadership styles means that governance methods are adaptable and compliant, addressing the dynamic needs of agile teams.

The study underlines the value of governance approaches that are effortlessly integrated into the existing business culture. For example, in clan cultures that value teamwork and loyalty, governance methods should be incorporated into collaborative team activities to improve acceptance and effectiveness. Adhocracy cultures that thrive on innovation require governance structures that allow flexibility and creativity while preserving critical controls. Market cultures that value competitiveness and results demand governance methods that align with performance measures and competitive benchmarks. Hierarchical societies value order and control, necessitating governance structures that foster agility while retaining structure. Tailoring governance frameworks to cultural contexts improves their efficacy and adoption by the organization (Guerin et al., 2018).

The study emphasizes the necessity of effective communication in maintaining transparency and resolving issues quickly. Regular team contacts, such as daily stand-ups and sprint reviews, foster a collaborative environment and increase team unity and productivity. These interactions guarantee that all team members are in sync with governance processes and corporate goals, instilling a sense of shared duty and accountability. Open communication lines also allow for early detection and settlement of concerns, preventing them from escalating and disturbing the project. Implementing techniques that improve communication and collaboration is critical to ensuring effective governance in agile environments. This finding resonates with Schwaber and Sutherland (2011).

Establishing continual feedback channels to fine-tune governance procedures based on team input is critical to their evolution and effectiveness. The study underlines the value of ongoing improvement in governance procedures. Regular retrospectives and review meetings allow team members to provide vital feedback on the effectiveness of governance structures. This input enables incremental adjustments, ensuring that governance procedures grow to suit the changing demands of the company while remaining relevant and successful. Kerzner (2017)

and BJSS (2024) concur that continuous feedback loops foster a culture of learning and adaptability, allowing teams to experiment with new techniques and develop them based on real-world experiences. Thus, organizations may ensure that their governance procedures are always in sync with their aims and the dynamic nature of agile approaches by cultivating a culture of continuous improvement.

Chapter 6. Evaluation of the research and conclusion

6.1 Introduction of Conclusions

This chapter provides a concise overview of the chapters in the entire report. It critically assesses the research approach, evaluating its relevance and the extent to which it has achieved its objectives. It determines whether contingency theory offers guidance to navigating governance processes within an agile software development team in an IT company embedded within an OEM.

6.2 Recommendations and Conclusions Regarding Research Objectives

Research Objective 1: To Examine the Current Governance Practices Employed by Agile Teams of Software Development Organizations within an Original Equipment Manufacturer (OEM) Environment in South Africa, Focusing on Aspects Such as Decision-Making Processes, Team Climate, Emotional Aspects of Leadership, and Team Interactions

The study suggests that the governance procedures in agile teams within OEM contexts are marked by extensive collaboration and adaptability. Collaborative decision-making techniques are primarily used, as they improve the quality of decisions and promote team unity. However, effective management is necessary to prevent any delays. The team atmosphere fosters creativity with settings that encourage creative thinking and experimentation. The emotional dimensions of leadership are crucial, as leaders' emotional intelligence significantly improves team interactions and performance. Regular communication and collaborative problem-solving are essential for effective governance since they facilitate transparency and ensure alignment with project goals. These findings highlight the significance of adaptive governance frameworks that balance structure and flexibility to meet the ever-changing requirements of agile teams.

Research Objective 2: To Identify the Key Challenges and Opportunities Faced by Software Development Organizations in Implementing Effective Governance Practices, Considering Factors Such as Leadership Styles and Organizational Culture

The primary obstacles in implementing efficient governance practices involve reconciling various leadership styles and harmonizing governance frameworks with heterogeneous company cultures. Transactional leadership promotes adherence to rules and regulations but

may impede the generation of new ideas and creativity. On the other hand, transformational leadership encourages the development of innovative solutions, but it may need to provide more attention to maintaining organized governance. Laissez-faire leadership encourages autonomy but might result in inconsistent governance procedures. Various organizational cultures, such as clan, adhocracy, market, and hierarchy, pose distinct difficulties and opportunities for governance. Adaptable leadership is necessary to implement effective governance methods suitable for different cultural contexts. This requires finding a balance between meeting compliance requirements and fostering innovation. The potential is in creating governance structures and leadership training programs that align with the culture and allow leaders to manage this complexity effectively.

Research Objective 3: To Recommend Best Practices and Strategies for Enhancing the Effectiveness of Governance Structures and Processes in Software Development Organizations Based on the Findings of the Case Studies and an Analysis of Industry Trends and Standards

The paper proposes many optimal methods and tactics for improving governance structures and processes in software development firms. Adaptive leadership is essential, as leaders must be skilled in managing the interplay between transformational, transactional, and laissez-faire elements to address agile teams' ever-changing requirements effectively. Effective governance frameworks should be harmoniously matched with the organizational culture to ensure adoption and maximize effectiveness. Consistent and clear communication is crucial, supported by daily meetings, evaluations of progress, and accessible communication platforms. Continuous improvement processes, such as frequent retrospectives and feedback loops, are essential for enhancing governance practices through team involvement. Promoting innovation by organizing knowledge-sharing sessions and fostering a culture that encourages calculated risk-taking is also advisable. These solutions guarantee that governance procedures promote innovation, accountability, and adaptability, improving overall effectiveness in agile contexts.

6.3 Policy Recommendation

Organizations should implement adaptive leadership training to improve governance practices in agile software development teams within OEM environments. This training should cultivate leaders who are capable of effectively navigating the complexities of agile governance by balancing transformational, transactional, and laissez-faire styles (Northouse, 2016; Johnson

& Dipboye, 2008). To enhance adoption and effectiveness, governance frameworks must be culturally sensitive and compliant with organizational cultures such as clan, adhocracy, market, and hierarchy (Hofstede, 2001; Laohavichien et al., 2009). To ensure transparency, align team activities with organizational objectives, and foster a culture of continuous improvement, it is essential to institutionalize regular team interactions, open communication channels, and continuous feedback cycles (Kerzner, 2017; Schwaber & Sutherland , 2011). In addition, the development of a culture of measured risk-taking within governance frameworks and the promotion of an innovative environment through knowledge-sharing sessions enhances the overall performance of the team by cultivating creativity and responsiveness to changes (Brunette, 2023; Trong Tuan, 2012). To guarantee project stability and quality, it is imperative to implement effective risk management practices that proactively identify and resolve potential issues (Hillson, 2009).

6.4 Limitations

Although the study on navigating governance processes in IT startups inside an OEM setting offers exciting insights into agile software development teams, it is essential to recognize numerous limitations. These constraints may impact the extent to which the findings can be applied to a broader context and should be considered when evaluating the results.

The study examines IT startups operating inside an OEM setting in South Africa. Distinct cultural, economic, and legal circumstances distinguish this context. This level of specificity implies that the results may take time to be relevant to organizations operating in different geographical regions or cultural contexts. The study's conclusions may have limited relevance because of the significant influence of national culture, economic situations, and legislative frameworks on the effectiveness of governance techniques.

One significant drawback of the study is its small sample size, which may be restricted and concentrated on a narrow subgroup of IT startups and agile teams in the OEM sector. Increasing the size or diversity of the sample could yield a more exhaustive comprehension of governance methods across various types of businesses and industries. The current sample size may not encompass the complete spectrum of experiences and activities, potentially restricting the depth and variety of insights obtained.

The study utilizes a qualitative research methodology, in-depth interviews, and thematic analysis to investigate governance processes. Although qualitative methods provide an in-

depth and comprehensive understanding, they are susceptible to interpretation and potential bias. The generalizability of the findings may be less straightforward compared to quantitative studies, and the viewpoints of the participants and researchers could impact the results. The inherent subjectivity of qualitative research requires careful interpretation of the results.

Another constraint arises from the dependence on data given by the participants themselves. Self-reported data is susceptible to biases, such as social desirability bias and recollection bias. These biases occur when participants submit responses that they see as expected or socially acceptable rather than accurately reflecting their experiences. This can impact the precision and dependability of the data gathered, thereby distorting the study's conclusions.

The study focuses on agile software development teams, which may have distinct governance requirements and procedures compared to non-agile or traditional teams. Consequently, the conclusions may not be relevant to businesses or teams that do not employ agile approaches. The study's reach and relevance to larger organizational practices may be limited due to the need for distinct techniques and concerns in governance procedures inside non-agile contexts.

The study analyses the influence of different leadership styles and organizational cultures on governance practices but may only consider some potential variants and combinations. The intricate nature of leadership and cultural dynamics implies that certain subtleties and particular settings may be partially conveyed. The interaction between various leadership styles and cultural traits can have unforeseen effects on governance practices, which the study may need to address fully.

Due to its limited duration, the study may need to reflect long-term changes and advancements in governance procedures accurately. An organization's dynamics and governance practices can change over time, impacted by both internal and external variables. A longitudinal study would yield a more comprehensive comprehension of the development and alteration of governance practices, encompassing long-term patterns and effects that a cross-sectional analysis would overlook.

6.5 Suggestions for future research

This section provides suggestions for further studies that can be conducted regarding the navigation of governance procedures in agile software development teams. Investigate governance of hybrid agile software development teams, where the members work remotely and on-site. Examine the function of technology and digital technologies in facilitating

governance practices within agile teams. Technology is essential in contemporary governance processes, particularly in agile environments. Subsequent investigations can explore how tools such as project management software, communication platforms, and data analytics help achieve efficient governance. A comprehensive understanding of how technology is incorporated into governance can offer valuable insights into effectively utilizing digital tools to improve governance operations.

Analyze the direct influence of governance methods on innovation outputs and team performance indicators. This study emphasizes the significance of governance in promoting innovation and accountability. However, further research is needed to measure the exact effects of these influences. Researchers can gather empirical evidence of the advantages and difficulties associated with various governance systems by quantifying innovation results, such as the number of new products and patents, as well as performance measures like project completion times and team satisfaction.

In order to elaborate further on the research problem, the researcher may explore alternative theories on which to base this research such as corporate governance theory, agency theory and lean startup theory

Utilize more extensive and more varied samples, encompassing enterprises of varying sizes, industries, and levels of development. Increasing the size and diversity of the sample would enable a more comprehensive representation of various experiences and governance approaches, resulting in more robust and more applicable findings. By incorporating organizations from diverse industries and different phases of development, such as startups and established enterprises, it becomes possible to find shared obstacles and successful approaches across many situations.

6.6 Conclusion

In conclusion, an agile software development team can benefit significantly from contingency theory's guidance in navigating governance processes. The necessity of adapting governance practices to the unique demands of the agile methodology is underscored by the theory, which advocates for context-specific approaches. It implies that leadership must be adaptable, utilizing transformational styles to foster innovation and transactional styles to guarantee adherence to regulations. Additionally, contingency theory underscores the significance of harmonizing governance frameworks with the organization's culture and structure, resulting in

a hybrid model that respects the OEM's hierarchical and risk-averse nature while providing the agile team with autonomy. Contingency theory establishes a comprehensive framework that guarantees accountability, agility, and alignment with agile objectives by integrating customized decision-making processes. Consequently, it is an essential instrument for efficiently managing the intricacies of governance in a multifaceted organizational setting.

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SUGGESTED JOURNALS

1. African Journal of Science, Technology, Innovation and Development
2. African Journal of Innovation and Entrepreneurship
3. South African Journal of Economic and Management Sciences

Appendix A: Participant Information

Dear Sir / Madam

My name is Malekgene (Rantho) Mnqayi. I am a student in Master of Business Administration at the University of the Witwatersrand, Johannesburg. My supervisor is Dr. Sylvester Horvey. I am conducting a research study about "Navigating Governance Processes in IT Startups: A Case Study within an Original Equipment Manufacturer (OEM)".

I am inviting you to answer a questionnaire here. If you decide to take part, your participation in this research study will last about 15 minutes for the questionnaire.

With your permission, I would like to keep a record of the response in anonymized form. This data will be stored in an encrypted folder on Microsoft Office OneDrive for 5 years and deleted after 5 years. Only the researcher will have access to the data.

During the research activity, I will need to ask for some personal information about you, including your name, surname, email address, and role title.

The interview/questionnaire/focus groups will be confidential and anonymous. When I share the results of the research study, I will not include your name or anything else that could identify you. With your permission, other researchers may use the data collected from this research study, but your name and any personal information will not be used or passed on.

If you decide to take part in the research study, it should be because you want to volunteer. You do not have to take part. You can stop being in the study at any time. You will not get any direct benefits if you choose to join the research study. You will not lose any services, benefits, or rights you would normally have if you decide not to join. Taking part in the research study will not cost you anything. You will not be paid for being in this research study.

The risks for this research study are no more than what happens in everyday life / some of the questions asked may make you feel sad or upset. If this happens, stop the interview/focus group and continue another time.

This research study will be written up as a research report. The report will be available on the university library website. If you would like to receive a summary of this report, I will be happy to send it to you.

If you have any questions during or afterward about this research study, feel free to contact me or my supervisor at the details listed below. If you have any concerns or complaints about the ethical procedures of this research study, you are welcome to contact the University Human Research Ethics Committee (Non-Medical), by telephone at +27(0) 11 717 1408, email hrecnon-medical@wits.ac.za.

Yours sincerely,
Malekgene Rantho

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Appendix B: Participant Consent

Research Project Details	
Title	**Researcher**
Navigating Governance Processes in IT Startups: A Case Study within an Original Equipment Manufacturer (OEM)	Malekgene Rantho

I, ……., agree to participate in this research project.

I agree to the following (Please circle the relevant options below):

The research study was explained to me. I understand what this study is about.	YES	NO
I understand that I can volunteer to take part in the study.	YES	NO
I agree that the interview/focus group/other activity may be audio recorded.	YES	NO
I agree that direct quotations from my interview/focus group/other activity may be used by the researcher in their research report/ manuscript/book chapter.	YES	NO
I agree that my participation will remain anonymous (my name or other identifying data will not be used by the researcher in their research report/manuscript/book chapter).	YES	NO
I agree that other researchers may use the information I provide in my interview/focus group/other activity (depending on their own ethics clearance being obtained) but my name and any personal information will not be used or passed on.	YES	NO

Participant		
Name & Surname	Signature	Date

Researcher		
Name & Surname	Signature	Date

Appendix C: Interview Questions

Question No.	Demographic Question	Response Type
1	What is your current job title?	Open-ended
2	What are your primary responsibilities in this role?	Open-ended
3	How many years have you been working in your current role?	Closed-ended
4	How many years of experience do you have working in agile software development?	Closed-ended
5	What agile methodologies or frameworks have you worked with (e.g., Scrum, Kanban, XP)?	Open-ended
6	How many members are in your agile team?	Closed-ended
7	What is the composition of your team in terms of roles (e.g., developers, testers, product owners)?	Open-ended
8	How would you rate the complexity of the projects you work on (e.g., low, medium, high)?	Closed-ended
9	Can you provide examples of typical projects your team handles?	Open-ended
10	Are you working remotely, on-site, or in a hybrid arrangement?	Closed-ended

Interview Question No.	Interview Question No.	Response Type
1. **Multifactor Leadership Questionnaire (MLQ) [Focuses on leadership styles and behaviors, especially transformational, transactional, and laissez-faire leadership]**		
1.1. Transformational Leadership		
1.	Can you provide an example of how your leader motivates and inspires the team?	Open-ended
2.	How does your leader encourage innovation and creativity within the team?	Open-ended
1.2. Transactional Leadership		
3.	How does your leader reward or recognize team members for their performance?	Open-ended
4.	Can you describe a situation where your leader intervened to address a problem?	Open-ended
1.3. Laissez-Faire Leadership:		

Interview Question No.	Interview Question No.	Response Type
5.	In what ways does your leader give the team autonomy to make decisions?	Open-ended
2. **Affective Meta-Model (AMM) [Addresses the emotional aspects of leadership and team interactions]**		
6.	How do you feel emotionally supported by your leader during challenging projects?	Open-ended
7.	In what ways do you think your leader's emotional intelligence impacts team dynamics?	Open-ended
8.	How do team members express their emotions, and how are these emotions managed by your leader?	Open-ended
3. **Team Climate Inventory (TCI) [Measures aspects of team climate like participation, support for innovation, and team vision]**		
9.	How do team members participate in decision-making processes?	Open-ended
10.	Can you describe how the team supports innovative ideas?	Open-ended
11.	What is the shared vision for the team, and how is it communicated by your leader?	Open-ended
4. **Organizational Culture Assessment Instrument (OCAI) [Assesses organizational culture types (Clan, Adhocracy, Market, Hierarchy)]**		
12.	How would you describe the organizational culture here? Is it more like a family (Clan), entrepreneurial (Adhocracy), competitive (Market), or structured (Hierarchy)?	Open-ended
13.	How does the organizational culture influence the way governance processes are implemented in your team?	Open-ended
14.	In what ways does the organizational culture support or hinder your team’s performance?	Open-ended
5. **Governance Structures and Processes Questionnaire (GSPQ) [Evaluates the effectiveness of governance structures and processes]**		
15.	How are governance processes designed and implemented in your team?	Open-ended
16.	Can you provide an example of a governance process that works particularly well or poorly?	Open-ended

Interview Question No.	Interview Question No.	Response Type
17.	How do governance structures support the alignment of team activities with organizational goals?	Open-ended
6. **Leadership Practices Inventory (LPI) [Focuses on specific leadership practices and behaviors]**		
18.	How does your leader set an example for the team?	Open-ended
19.	Can you describe how your leader challenges the team to achieve higher standards?	Open-ended
20.	How does your leader foster collaboration among team members?	Open-ended