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Hybrid project management in the context of a hybrid workplace: challenges and limitations

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research dissertation

**Hybrid project management in the context of
a hybrid workplace.
Challenges and limitations.**

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**Advanced Research in Information Systems –
ARAMIS
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Summary

In the light of the widespread adoption of hybrid workplace models as a result of the COVID 19 pandemic, hybrid project management has become a prevalent approach in today's dynamic work environment and is considered to be adequate to the hybrid workplace model. This study aims to explore the challenges associated with this emerging project management approach. The study employs a mixed-methods research design consisting of a literature review, systematic literature review (SLR), and explanatory interviews to develop a theoretical framework for testing. The findings reveal several key challenges, including communication difficulties, lack of collaboration, knowledge-sharing challenges, limited social interactions, lack of motivation and awareness, trust-building difficulties, and intra-team conflicts. These challenges have the potential to hinder project success, impede effective teamwork, and impact overall organizational performance. The developed theoretical framework provides a structured understanding of the interplay between these challenges within the context of hybrid project management as understanding and addressing these challenges are essential for organizations to effectively navigate the complexities of hybrid project management and ensure successful project outcomes in a hybrid workplace model.

Keywords: Project management challenges, hybrid project management, agile project management, hybrid workplace, remote working, qualitative analysis.

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FOREWORD

INTRODUCTION

Since the COVID-19 pandemic, the way office work is conducted and managed has undergone a significant transformation (Diab-Bahman and Al-Enzi 2020; Schmidtner et al. 2021). The changes brought by the pandemic have led companies to implement remote working to the greatest possible degree. As a result, given the multiple advantages of remote working and its large-scale adoption, most companies have now transitioned to a hybrid workplace model that combines remote and on-site work (Urbaniec et al., 2022).

While remote working has previously been well-known as a reliable method of ensuring operational continuity for organizations in challenging crisis situations (particularly during natural disasters) (Donnelly et al., 2015), numerous companies had little experience with remote work before the pandemic (Urbaniec et al., 2022). Consequently, most workers had to quickly learn how to interact and collaborate with coworkers while working remotely (Waizenegger et al. 2020; Yang et al. 2023).

And thus, the implementation of hybrid workplace models has transformed the way organizations operate and has required the adoption of new managerial practices and processes particularly regarding project management (Shamim, 2022). Indeed, project managers started adopting different strategies for project management when working remotely through the migration toward managing their projects using agile processes (Asfaw et al., 2022). Because agile methods allow teams to quickly respond to changing circumstances and unexpected scenarios, the introduction of agile practices to the already existing traditional project management methods under the concept of “hybrid project management” within organizations has increased widely post-pandemic. This change in management practices has resulted in challenges for project managers (Shamim, 2022).

Several studies have discussed project management challenges in the context of remote working (Abarca et al., 2020 ; Chamakiotis et al., 2021 ; Gandrita et al., 2022 ; Sonjit et al., 2021 ; Swart et al., 2020), however, to the author’s knowledge, there is no existing paper that discusses the challenges of hybrid project management in a hybrid workplace model. To address this gap in research and to investigate the challenges of hybrid project management in a hybrid workplace setting, we conducted a study with the following research question:

“What are the challenges of hybrid project management in a hybrid workplace?”

To answer this research question, the following study introduced a literature review to provide more insight into the concepts of hybrid workplace models and hybrid project management. Then, a systematic literature review was conducted through a comprehensive examination of relevant academic publications to gather existing knowledge on the challenges of project management in the context of remote working. This systematic literature review formed the foundation for understanding the current state of research and practice in this area.

Additionally, to confirm and validate the findings of the SLR and their relevancy to the context of hybrid project management and hybrid workplace models, explanatory interviews were conducted with two experienced project managers and one employee who follow a

hybrid project management strategy in a hybrid workplace. These interviews provided us with valuable insights, experiences, and perspectives that complemented the findings from the SLR and thus enabled us to develop a theoretical framework that explains the challenges of hybrid project management in a hybrid workplace. The framework provides a conceptual lens to analyze and understand the underlying factors contributing to these challenges. It outlines the interrelationships between different variables and their influence on project management outcomes in a hybrid workplace setting.

The ultimate goal of this research is to provide practical insights and recommendations for project managers to overcome the identified challenges and enhance project success in hybrid workplace environments. By addressing these challenges through evidence-based research and theory development, this study aims to contribute to the ongoing improvement and refinement of project management practices in the ever-evolving landscape of hybrid work.

CHAPTER I
-
LITERATURE REVIEW

1 CHAPTER 1 – LITERATURE REVIEW

Literature review

This chapter provides an overview of the concept of remote working by presenting the history of remote work, its advantages, and its challenges. It also explains the concept of hybrid working and provides definitions of traditional, agile, and hybrid project management while highlighting its advantages and challenges.

1.1 History of remote work

Remote work, which is also known as "working from home," "telework," "teleworking," or "telecommuting," is described as "...a flexible work arrangement whereby workers work in locations, remote from their central offices or production facilities, with no personal contact with co-workers, but the ability to communicate with co-workers using ICT" (Di Martino & Wirth 1990).

The establishment of WFH rules in the 1970s may have marked the beginning of a significant shift away from traditional, office-based labor toward remote work, as rising gas prices brought on by the 1973 OPEC oil embargo raised the cost of commuting. Those rules allowed workers to work from home, in coworking spaces, or in other public places like coffee shops and libraries for a few days, regularly or full-time, with the expectation that they would periodically return to the office. Employees were frequently given freedom over their own schedules as well. In addition to saving time by commuting less, they tended to take fewer sick days (Choudhury, 2020). The adoption of WFH increased in the 2000s as a result of the development of the internet, personal computers, broadband connectivity, email, cell phones, laptops, videotelephony, and cloud computing (Baker, 2021).

Many companies have started allowing more staff to work remotely in recent years. However, a few of organizations—including IBM and Yahoo—reversed course before the epidemic, asking their staff to resume office work in an effort to promote more effective collaboration. While this was happening, some businesses advanced toward more geographic flexibility, allowing some, if not all, of their staff to work remotely. However, the pandemic's forced experiment with entirely remote work has spurred most firms to advantageously move toward majority-remote, with fewer than 50% of people working in offices (Sokolic, 2022).

In 2019, 5.4% of EU workers worked from home on a regular basis, while 9% of workers did so at least occasionally (EC, 2020). This slow-moving tendency was abruptly transformed into a phenomenon by the pandemic. By the second half of 2020, 17.4% of the world's workforce was already engaged in remote work, according to the International Labor Organization (ILO, 2021).

However, not all professions or industries lend themselves to remote work. Only a small percentage of jobs were compatible with remote working (Dingel and Neiman, 2020; OECD, 2021). The ILO (2021) estimates that roughly 18% of workers have jobs that are suitable for remote work and reside in countries with the infrastructure to support it because remote work models are more difficult to establish in developing nations and economies with slower growth and jobs needing unskilled labor.

In addition, it has been found that remote work is more prevalent in high-skilled jobs and that telework rates during the pandemic were higher among employees in large firms than in small ones; even in Japan, which has not undergone a nationwide lockdown, telework rates increased from 10% to 28% in the first six months of 2020 (OECD, 2021).

When the pandemic started, telecommuting—working from home—became a swift substitute for the traditional workplace to avoid significant disruptions that would have caused firms to cease operations (Choudhury et al., 2020), which would have had a negative impact on the economy worldwide. This enabled operations to carry on as usual while remaining in a pandemic-proof environment and adhering to the social distance guidelines, but it also raised some concerns regarding the effect of telecommuting and remote work on further organizational development in economic, social, and psychological contexts. Over the past two or three decades, numerous definitions of telecommuting have been put forth (Sokolic, 2022).

According to Allen et al. (2015), telecommuting refers to a work arrangement where employees can work remotely from a designated location, using technology to communicate and collaborate with internal and external stakeholders as needed to complete their work tasks. This work arrangement typically applies to employees who are members of a larger organization and work primarily from home or a designated location for a period of time, ranging from a few hours to nearly full-time. The use of technology plays a crucial role in enabling telecommuting employees to interact with others and accomplish their work tasks effectively (Allen, 2015).

The term telecommuting is frequently utilized interchangeably with various other phrases such as telework, remote work, distributed work, virtual work, flexible work, flexplace, ICT-mobile work, and distance work, among others. While each of these phrases offers an alternative for commuting to and from work, they also have unique characteristics, come from various sources, and apply to various contexts. Telework is used to describe a situation in which any type of ICT replaces travel to work, independent of the worker's employment status, even if the terms overlap in that they suggest that all or part of the work is conducted away from the employer's premises. It is more closely related to the concept of remote work than telecommuting in terms of employment status (Skolic, 2022).

The term "remote work" differs from "telecommute" in that it is more inclusive and covers all types of work, including contract labor and standard employment (ILO, 2020), whereas "telecommute" is only applicable to employees and thus excludes individuals who are self-employed. Remote work is any job done at a distance and telework is also directly tied to the use of information technology and digital equipment (Eurofound, 2020a). In conclusion, telecommuting focuses on substituting a different workplace for the employer's premises for at least some of the working hours, resulting in fewer or no excursions to the office. As a subcategory of telework and remote work, it also incorporates ICT. Work from home, which is defined as work done entirely or in part at the employee's home, is a more specialized kind of remote work. More generally, it may or may not call for the use of digital technology and can be carried out by both dependent and independent employees (Skolic, 2022).

1.2 Remote work benefits

The advantages of remote work have been explored in numerous studies. Kurland and Bailey (1999); Shin et al. (2000); Pérez et al. (2002); Felstead & Henseke (2017); Bao et al. (2017).

According to the literature, the main benefits of remote work include raising employee productivity and job satisfaction while reducing real estate expenditures.

Employees who work remotely enjoy better work-life balance and more flexible schedules. Additionally, remote employment benefits a varied talent pool that may not otherwise have been accessible due to distance, such as, people with disabilities (Spark 2017), and those with neurodiverse traits (Lister 2021).

1.2.1 Productivity and work satisfaction

Numerous studies that looked into the effect of remote work on productivity concluded that it had a positive impact on production (Vitters 2003; Collins 2005; Bloom et al. 2013). According to Kazekami (2020), productivity increases when remote work hours are adequate, but it decreases when they are excessive. Additionally, remote work boosts quality of life, and quality of life boosts productivity. Another finding of Kazekami's study is that working remotely boosts both work satisfaction and happiness, although neither of these factors has an impact on productivity.

However, remote workers do find it difficult to draw a distinction between home and work. In a recent study conducted DeFilippis et al. (2020), emails and meetings from 3.1 million people in 16 different cities around the world were analyzed. According to the findings, there have been more emails sent and received as well as an increase in the length of the typical workday by 48.5 minutes, or 8.2%. Employees might not have worked continuously throughout the day, though; they might have created more flexible timetables to take into account frequent interruptions. Additionally, according to Lister (2021), remote workers are more engaged in their tasks than those who are not working remotely.

1.2.2 Reduced absenteeism

According to Nakroien (2019), the possibility of working when ill raises remote workers' happiness with their jobs. This suggests that remote work may be an appropriate solution for businesses to the problem of presenteeism, which is defined as attending work while ill and is linked to a greater decline in output than absenteeism (Johns 2010). Therefore, remote work enables employees to fulfill their professional commitments and their drive to persevere in a cutthroat environment, even when they are ill. Working remotely may help people with depression and other psychological issues that are strongly connected with presenteeism (Conti and Burton 1994).

Lister (2021) also found that the majority of people who call in sick are actually not feeling poorly. Nearly 70% of unscheduled absences are caused by stress, family or personal

concerns, or just plain being sick of working. According to case studies, the ability to work remotely can cut absenteeism by 26 to 88 percent. Following the introduction of WFH choices, BBC observed a 26% decrease in stress-related absences among home-based employees, and Apollo discovered an 88% decrease in unauthorized absences.

Therefore, remote work reduces absences as remote workers are less exposed to ill coworkers, have the flexibility to handle personal appointments without taking days off, are subjected to lesser environmental and occupational hazards, are sometimes capable and prepared to resume working (at home) sooner following surgery, extended illness, or the delivery of a child, and may be eager to work when they are not feeling well enough to go to the office (Baker, 2021).

1.2.3 Continuity of operations and reduced voluntary turnover

Employees that work remotely are able to continue operating in the case of an emergency. For example, employees who had previously worked remotely were able to resume work quicker than those who hadn't once the pandemic struck, and people were required to do so (Baker, 2021).

According to Lister (2021), the expense of replacing an employee might be anywhere between 10 and 213 percent of the salary. Beyond the expense of hiring a successor, departure, lost productivity and training, turnover may lead to the loss of customers, coworkers, morale, and organizational memory. Additionally, it can disrupt team dynamics, impede the onboarding of new clients and postpone projects.

Novel hires also carry a high chance of failure in integrating the organization, because roughly 40% of them leave before their first anniversary. Most employees have always aspired to the ability to work when and where they desire. Research conducted just months into the epidemic found that the majority of people who work remotely want to do so at least one day a week after the pandemic, while a third would forego up to 5 percent of their income for the chance and a quarter say they would accept a pay loss of over 10 percent. Working remotely has proven to increase talent retention and desirability, not just because it is highly regarded by employees but also because it broadens the talent pool (Baker, 2021).

1.3 Remote work challenges

While there are many benefits to remote work, such as flexibility and increased productivity, it also comes with its own set of challenges. Studies have shown that applying remote work among organizations results in communication hazards, difficulties in performance monitoring, inadequacy for all jobs, social isolation, and a lack of clear boundaries between work and home responsibilities (Moretti et al. 2020; The Balance Careers 2020).

1.3.1 Team performance

Since most organizations require workers to collaborate, performance may not just depend on the individual employee but also on whether or not coworkers are working from home. Van der Lippe & Lippényi (2019) analyzed coworkers in nine European countries as part of a study that aimed to better understand how WFH affects outcomes for team performance as well. The study showed how employees' and coworkers' WFH was related to the individual and team performance and involved 11,011 employees in 869 teams across 259 companies.

First, the study discovered that when their coworkers are not working from home, individual employees perform better. The degree to which coworkers' work from home seemed to have an impact on how well each employee performed. The employee's performance declines with the proportion of WFH coworkers (van der Lippe & Lippényi 2019). Working together becomes more difficult when coworkers are unable to communicate critical information (Knights and McCabe 2003).

This finding illustrates that implementing remote work may influence individual-level performance; as a result, it is crucial to consider how employees affect one another and how they make use of one another's skills and expertise. This result is consistent with the findings of research showing that WFH increases workload (Felstead & Henseke 2017). Since coworkers are not readily available, it will be the responsibility of the individual employee to make more of an effort to capitalize on their knowledge and skills. This shows that, from the perspective of the coworker, digital presence cannot entirely make up for physical presence. This is related to the role of ICT and the larger body of WFH literature, according to Boell et al. (2016) and depends on the nature of the task.

Second, the study showed that when coworkers WFH, the manager's claimed that the team's performance was subpar. When team members work from home no more than a single day per week, managers rank team productivity to be greater. Thus, it is clear that managers want to supervise their teams, and they have more opportunity to do so when they allow them to work less from home (van Dyne et al. 2007). This highlights the manager's desire to monitor, and the challenges presented by WFH employees. This is particularly important when organizations are thinking about introducing flexible WFH agreements.

Additionally, a study carried out by Baker et al. (2007) examined how various factors from the organization, work, individual, and household environments affected WFH in a group of seasoned WFH personnel. The chosen variables came from previous studies that suggested there was a likelihood they would be linked to WFH outcomes. Assistance from human resources, technical support, training of others, and management trust are among the organizational characteristic variables that strongly correlate with satisfaction but not with productivity. Employer financial support was one of the factors strongly linked to productivity but not satisfaction. The two factors connected to giving feedback to the WFH experts had the most consistent impact on the work side and were significantly correlated with both work satisfaction and productivity. Task identity, or a work made up of whole pieces of work, is also advantageous. In contrast to other studies, Baker et al. (2007) showed non-significant connections between cooperation among team members and office work.

Surprisingly, no personal nor societal characteristics were linked to either productivity or satisfaction with work. Even more unexpectedly, there was no statistically significant association between WFH staff training and WFH results (Baker et al. 2007).

Manager's trust is a crucial factor for satisfaction but not for perceived productivity. Typically, trust and control are contrasted. According to research (Maclagan 1983, Dose & Klimoski 1995, Ferris et al. 1995), trustworthy followers are more likely to react negatively to domineering managers. In a trusting environment, when fewer controls are possible, scarcer controls are required, which is compatible with WFH (Baker et al. 2007).

Employees who work remotely are more highly engaged than those who do not, according to prior research. Remote employment forces managers to evaluate employees based on their output rather than their attendance at work, which has never been a reliable indicator of performance (Baker, 2021)

1.3.2 Managerial challenges

The detrimental effects of WFH on performance, as were previously highlighted, help to explain why companies like IBM, Yahoo!, HP, Best Buy, and Bank of America, which are in an ideal position to support it, discourage it instead. The existence of direct supervisors who are not particularly supportive of their team members frequently working from home may be a source of pressure on top managers to stop supporting WFH arrangements (van der Lippe & Lippényl 2019). Some senior executives have even discontinued the WFH initiatives of their companies (Weinert et al. 2014).

Additionally, creating an appropriate organizational culture to support WFH may be difficult in some areas. For instance, it has been suggested that national cultures may affect the manager's reaction when employees ask for WFH since the manager's response differs based on the manager's propensity to commission power and trust to WFH employees (Peters & den Dulk 2003; Baker et al. 2007).

Lastly, concerns about visibility and career development are fairly prevalent among WFH employees (McCloskey & Igbaria 2003). As well as ensuring that the management culture is one of support and trust, implementing a hybrid workplace model within an organization's culture may help to overcome some of these potential WFH challenges.

1.4 Hybrid workplace model

The term "hybrid working" has gained popularity since Covid 19. Due to the crisis, a lot more businesses and workers are becoming familiar with working remotely. Studies conducted after the pandemic lockdown have revealed an increase in the number of employees working remotely (Speijer, 2023).

The majority of the workforce perceived a positive experience in terms of job efficiency, control, and work-life balance, which can be used to explain this. As a result, companies are embracing a hybrid working style. (Appel-Meulenbroek et al., 2022)

Before hybrid working became widespread, teleworking covered both employees working entirely from home or those who worked in a hybrid style. Halford (2005) was one of the first to characterize hybrid work as working both from home and on an organization site.

In the past, co-located and virtual team cooperation has been referred to as hybrid working (Appel-Meulenbroek et al., 2022). For the sake of this research, hybrid working is a combination of in-office and remote work (see Figure 1), integrating the two modes in a manageable way (Speijer, 2023).

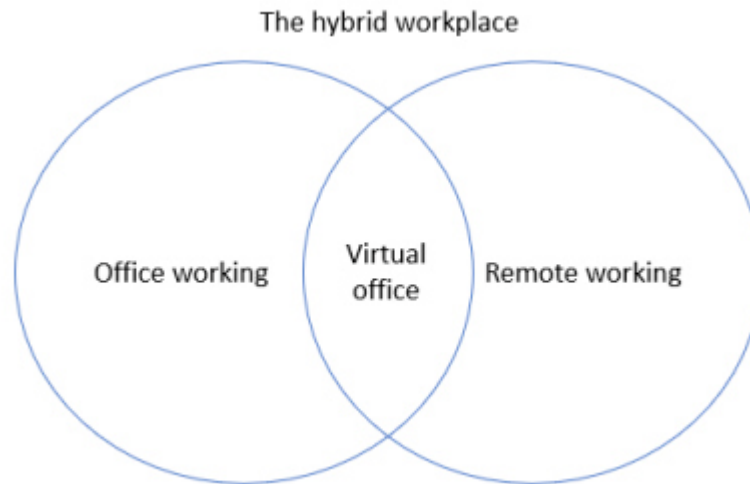


Figure 1: hybrid working (made by author)

In a hybrid workplace, team members interact primarily through digital communication which refers to the act of exchanging information, messages, and ideas among individuals at a specific location and time via digital channels and equipment (Olúbòdé-Sàwè, 2010).

Consequently, given the global adoption of the hybrid workplace model post Covid 19, digital communication has become crucial for organizations to execute and manage projects successfully and ensure stakeholders are properly involved. Moreover, digital communication is anticipated to be heavily employed in the near future and constantly evolving in the hybrid workplace (Swart et al., 2022).

And thus, information communication technology (ICT) tools have become essential for conducting projects and communicating with stakeholders as project tasks for geographically distributed and technologically reliant teams are continuously growing in complexity (Binz-Scharf, 2004). Hence, a successfully deployed hybrid strategy, calls for a considerable organizational change in project management processes and practices to which the hybrid team must adapt in order to overcome the challenges resulting from digital communication as opposed to traditional face-to-face communication (Swart et al., 2022).

1.5 Traditional project management

According to Kerzner (2013), project management is the process of arranging, directing, and regulating resources for short-term goals that help organizations achieve particular objectives. The traditional approach to project management has been quite hierarchical and linear. In the early phases of a project, these methodologies significantly rely on planning, documentation, and requirements analysis (Sixsmith, Freeburn, & Mooney, 2014).

This is illustrated in the views of process groupings in traditional project management (TPM).

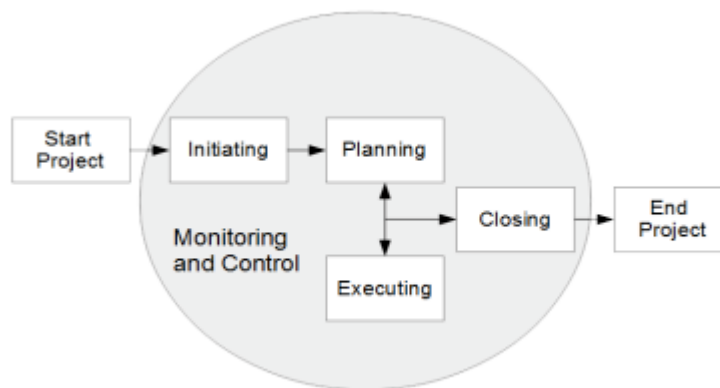


Figure 2: Traditional Project Management (TPM) Process Groups according to (Rose, 2013)

According to Fernandez & Fernandez (2008), many procedures in TPM are perceived as linear and sequentially reliant on the outcomes of previous stages. For instance, teams are able to proceed to planning the full product based on the vision through visioning in the initiation phase. The plan can then be shifted from creation to execution and ultimately closure after it has been made.

The control phase is used to handle execution in the real world, where plans are not always followed. Processes are utilized in this phase to track progress and refocus efforts as necessary (Rose, 2013). With this method, modifications to the project are closely monitored and properly documented up until delivery of the last item on the work breakdown structure.

The most widely used model in TPM practices is the waterfall model that was originally created for software development (Rehman, Rauf, & Shahid, 2010) and is illustrated in figure 3.

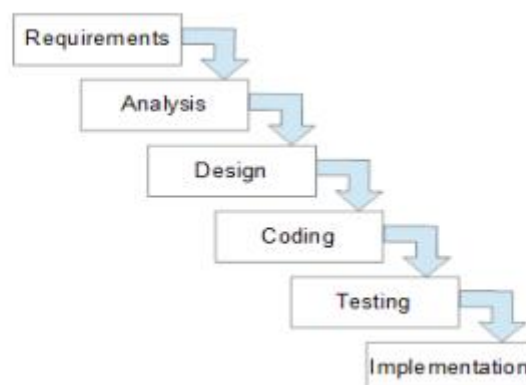


Figure 3: Waterfall development model (Royce, 1970)

The waterfall model was first articulated by Royce (1970) as the method many firms used for software development. With its sequential methodology, the waterfall model divides development into several phases. Each phase is carried out in turn, and the commencement of a new phase is delayed until the conclusion of the previous one. Documentation is also created at the conclusion of a phase (Balaji & Murugaiyan, 2012). The development flow has a beginning and an end in this way. The project starts with the preliminary planning phase and continues through the cycle until it is finished, and implementation may start.

But this also turns out to be one of its biggest flaws. Unexpected challenges that frequently arise during any phase of software development are not appropriately addressed by the waterfall method (Ken Schwaber, 1997). Other software development models, like the spiral model, v-model, iteration model, and extreme model, were developed in response to problems like these (Munassar & Govardhan, 2010).

The implementation of hybrid workplace models has led to a need for new management approaches. Although TPM techniques and approaches were appropriate in earlier decades, some have questioned the theory supporting those approaches as being out of date (Koskela & Howell, 2002). These criticisms are founded on theories about how a shifting business environment demands more sophisticated development in hazy project environments. Modern project environments are subject to fast change, which can lead to circumstances where TPM not only fails to address problems but also makes them worse (Williams, 2005).

According to Baskerville et al., (2003), one of the key arguments against the traditional project management method is that it cannot adapt to the volatile and dynamic nature of corporate organizations, technology, markets, customers, and socio-technological settings. Therefore, agile project management practices are considered to be alternatives in such environments.

1.6 Agile project management

The original guideline for implementing Agile is the Agile Manifesto (Beck et al. 2001). To efficiently manage software development projects, it defines the core principles of Agile project management. Agile emphasizes people and interactions over processes and tools, formalizing comprehensive documentation may slow down development, working in collaboration with project stakeholders rather than negotiating changes, and enhancing responsiveness and reactivity to changes.

Agile project management has been characterized by several authors (Schwaber and Beedle 2001; Schwaber 2004; Dyb and Dingsyr 2008) as a combination of numerous approaches, including crystal methodologies, dynamic software development, adaptive software development, feature-driven development, Lean software development, extreme programming, and the Scrum method.

A development project's ability to adapt to shifting requirements in tumultuous market contexts is key to its success. Agile thus employs an iterative approach that results in the gradual release of a finished project output. Agile project management aims to release various output components as soon as possible, at the end of each iteration, with the objective of gathering feedback from the key project stakeholders (particularly customers),

based on the premise that an early prototype is required to test the project assumptions. Companies execute (and eventually modify) future iterations using feedback they get regarding the working product, which results in a final output that best meets the demands and expectations of stakeholders.

Agile project management, along with the associated practices, tools, and methodologies, have shown to be flexible in a variety of dynamic environments and have been utilized in projects with a variety of characteristics (Conforto et al. 2014). Agile has changed from being a method that was exclusively used in the software development industry to one that is now widely used in the food, construction, and consumer electronics industries (Goldstein and Euchner 2017; Ito 2017; Pellizzoni, Trabucchi, and Buganza 2019).

On the context of remote working, in response to Covid-19, Agile adoption has grown by 33%, according to the 14th Annual State of Agile Report (Digital.ai, 2020) with 60% of respondents saying that Agile has aided their speed to market. In the age of agility and rapid transformation, agile has demonstrated to be one of the approaches capable of tackling complex problems and quickly adjusting to business changes by staying connected to the consumers (Raharjo and Purwandari, 2020).

1.7 Project management in hybrid workplace models - toward a hybrid project management approach

Different firms are studying and using hybrid project management approaches more frequently. The necessity to manage several project types within a single organization as well as new market challenges like complexity and innovation is what is driving this interest. In these situations, the adoption of pure management methodologies (agile and waterfall) does not entirely meet the needs of each instance due to the variety of interrelated aspects and the uniqueness of each project (Adelakun et al., 2017; Riesener et al., 2018; Ambler & Lines, 2018).

By balancing predictability and anticipation with flexibility and adaptation, the mix of agile and waterfall approaches attempts to provide agility in complex contexts.

Conforto et al.'s definition of hybrid models (2015, p.10), define hybrid models as:

“The combination of principles, practices, techniques and tools from different approaches in a systematic process that aims to adapt management to the business context and specific type of projects. The goal is to maximize the performance of the project and product, provide a balance between predictability and flexibility, reduce risk and increase innovation, to deliver better business results and customer value.”

In the context of hybrid workplaces where project managers are required to adapt their traditional project management methods to meet the unique challenges of remote and in-person work environments (Shamim, 2022); hybrid project management models can be deemed suitable to respond to the challenges of such environments.

In the literature, a variety of hybrid models have been proposed. Silva et al. (2019) provide a thorough literature review to identify these models. Table 1 provides a summary of this analysis.

Authors/year	Hybrid Model	Combination of approaches	Which methods/models encompass	Application area
(Nawrocki et al., 2006)	XPrince	Agile + Waterfall	Extreme Programming (XP), PRINCE2 and Rational Unified Process (RUP)	Software development
(Rahimian & Ramsin, 2008)	Mobile Software Development Methodology	Agile + Agile	Adaptative Software Development (ASD) and New Product Development (NPD)	Mobile software development
(Cho, 2009)	Hybrid Software Development Method for Large-Scale Projects	Agile + Waterfall	Rational Unified Process (RUP) and SCRUM	Large and complex projects
(Zaki & Moawad, 2010)	A Hybrid Disciplined Agile Software Process Model	Agile + Waterfall	Scrum, Extreme Programming (XP), Feature Driven Development (FDD) and Rational Unified Process (RUP)	Software development
(Seyam & Galal-edeen, 2011)	Tragile	Agile + Waterfall	SCRUM, XP, Crystal Family, Structured Systems Analysis & Design Method (SSADM)	Information systems
(Ambler, 2013)	Disciplined Agile Delivery	Agile + Agile	XP, SCRUM, Lean Software Development	Software development
(Anitha et al., 2013)	V-model +Scrum	Agile + Waterfall	V-model, Scrum	Information systems
(Binder et al., 2014)	Cocktail Model	Agile + Waterfall	Agile practices and ISO 21500	Software development
(Ahmad et al., 2014)	XSR Model	Agile + Waterfall	SCRUM, Extreme programming (XP) and Rational Unified Process (RUP)	Software development
(Cooper, 2014)	Agile-Stage-Gate	Agile + Waterfall	Stage-Gate® and agile practices	Complex projects
(Sommer et al., 2015)	Industrial Scrum Framework	Agile + Waterfall	Modelo Stage-Gate® and SCRUM	Industry (wind turbines, valves and sensors)
(Silva, 2015)	Combined time planning	Agile + Waterfall	SCRUM and waterfall practices	Aircraft industry
(Conforto & Amaral, 2016)	Iterative and Visual Project Management Method	Agile + Waterfall	Stage-Gate® and agile practices	Manufactured products and software development

Table 1: Hybrid models identified in the literature (Bianchi et al., 2021)

Despite the presence of different models, each is constrained by the fact that it was created for a particular environment, taking into account the specifics of the business, product qualities, consumer, market, and technology (Bianchi and Amaral, 2020).

1.7.1 Advantages and benefits of hybrid project management

The goal of hybrid project management is to increase project success (Farokhad et al., 2019; Edward and al., 2022). Nevertheless, this project management strategy has some benefits and drawbacks. The advantages and benefits of hybrid project management will be examined in this section. We have broadly construed "advantages and benefits" to refer to any favorable outcomes that might result from employing the hybrid approach to project management for the project or the business. Increased efficiency is among those advantages (Radujković et al., 2014; Wysocki and Orłowski, 2019).

A suitable tool can be used depending on the project type and project status due to the wider number of approaches and methodologies available. By doing this, the project's advantages may be improved in some situations, a better outcome may be obtained, and the objective may be accomplished more rapidly and at a reduced cost (Cooper and Sommer, 2018; Copola et al., 2021). It is frequently unclear how the project goals will be accomplished when it first begins. Even with long-term planning of time, money, and milestones, the project's goal plan can concretize the objective using the hybrid approach (Hassani et al., 2018; Edward and al., 2022; Wysocki and Orłowski, 2019).

The needs and advantages of the consumer are highlighted (Koszyán et al., 2020). Permanent feedback ensures that the product will provide the most advantage to the client (Farokhad et al., 2019). Higher inventiveness in problem-solving is another benefit of the hybrid strategy. The project team creates the best solution option for the present project state in individual iterations through iterative detailed planning (Hassani et al., 2018). If changes do happen, the hybrid strategy can be applied to handle these changes adaptably.

In comparison to pure conventional project management, hybrid project management with an agile component in project execution enables substantially more flexible response times (Radujković et al., 2014; Hassani et al., 2018; Koszyán et al., 2020; Netto et al., 2020). On the other hand, it is flexible enough to consider changes in priorities or new requirements without having to totally reschedule the project. Motivated project teams are a byproduct of the hybrid project management methodology (Brown et al., 2020). The personnel will complete the project aim on their own will by removing the traditional leadership positions (Gemino et al., 2021). This not only boosts employee motivation but also aids in team members' personal growth in terms of social and professional skills (Netto et al., 2020).

1.7.2 Disadvantages and challenges of hybrid project management

Despite all its benefits, the hybrid project management technique has some drawbacks that cannot be overlooked. For analytical reasons, "disadvantages and challenges" are widely characterized as any "hurdle, barrier, concern, or critique" (Reif and Shlegel, 2022) against the hybrid strategy. The fact that the project management and team must possess in-depth methodological understanding is a significant drawback (Brown et al., 2020). High methodological competence is required of everyone working on the project (Netto et al., 2020).

The most challenging aspect is choosing an appropriate tool in the first place and using it appropriately (Edward and al., 2022). The benefits of hybrid project management can only fully materialize in this manner. As a result, it is important to prepare for an increase in the demand for training and acquaintance (Edward and al., 2022). Additionally, the hybrid method demands a high level of openness and communication (Yadav et al., 2007). Direct risks, issues, and faults are addressed, constructive criticism is expressed, and cogent solutions are sought. Hybrid project management enables decisions to be made based on the most comprehensive knowledge possible by managing information transparently. However, effective communication is necessary, especially at the interfaces where the methods meet (Copola et al., 2021).

1.8 Conclusion

As seen in the literature, remote working teams have been the subject of research in information systems (IS) and management for more than two decades (e.g., Jarvenpaa & Leidner, 1999). Remote teams emerged because of technological advancements and business trends for globalization (Townsend et al., 1998) and gained popularity because of many advantages.

However, the coronavirus disease 2019 (Covid-19) has prompted a widespread shift toward virtual cooperation, which is sometimes referred to in the literature as remote or distributed working (Venkatesh, 2020). Additionally, it has rekindled interest in how ICTs can enable new working arrangements, necessitating novel research (e.g., Gerfalk, Conboy, & Myers, 2020; Bailey & Breslin, 2021; Chamakiotis, 2020b; Waizenegger, McKenna, Cai, & Bendz, 2020).

Additionally, findings of the literature showed that these recently transitioned teams have some traits in common with earlier remote prior to Covid-19, the imposed nature of remote work that has emerged because of the pandemic and the growing number of hybrid forms of work call for alternative leadership practices and focus (Feitosa & Salas, 2020). Since nearly all organizations currently rely on remote working to carry out their projects, the complexity of managing these remote projects has increased (George et al., 2020).

While prior research has been conducted on project management challenges when working remotely, to the author's knowledge, there is no existing paper addressing hybrid project management challenges in a hybrid workplace environment. And thus, this lack of empirical evidence stimulates a very important question:

“What are the challenges of hybrid project management in a hybrid workplace?”

CHAPTER II
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METHODOLOGY

2 CHAPTER II – METHODOLOGY

2.1 Research methodology

Since the aim of this study was to explore the challenges of hybrid project management in hybrid workplace models, we chose to conduct a literature review to provide answers for our research question.

From our literature review, we concluded that researchers have conducted several studies to explore the challenges of project management regarding remote working. However, we found that there were no existing studies tackling hybrid project management challenges in hybrid workplace settings. For this reason, a multi-method approach was used to answer our research question. First, a SLR was conducted to identify the main challenges of project management regarding remote working teams, then explanatory interviews done with managers and professionals working in a hybrid workplace and following a hybrid project management strategy were quickly analyzed to confirm the findings of the SLR and to elaborate a theoretical framework to explain the challenges of hybrid project management in a hybrid workplace, as displayed in figure 4.

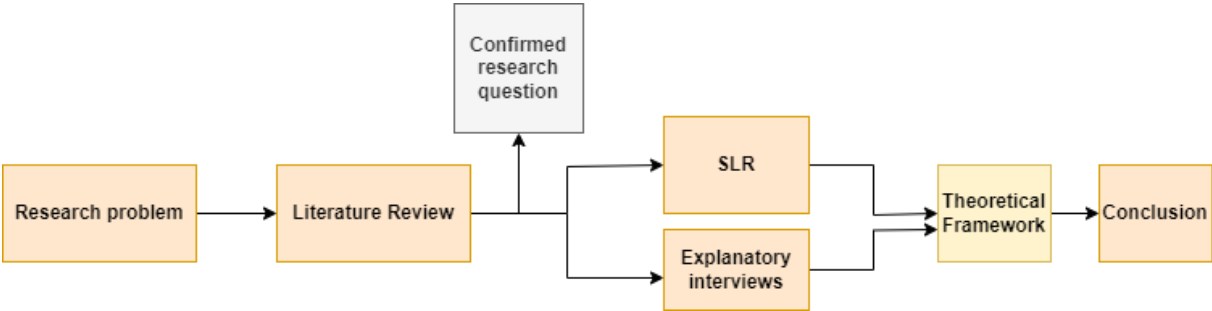


Figure 4: Research Method

2.2 Systematic literature review – SLR

A SLR evaluates a specified issue using direct approaches in order to gather and critically analyze data from the research papers included in the review process (Angela Boland 2017).

It makes it possible for the search for pre-existing evidence to be objective, open, and repeatable (Angela Boland 2017). Additionally, the entire SLR process is thoroughly reported and documented. Different researchers in various domains perform SLR in various ways. The guidelines made by Barbara Kitchenham (Kitchenham et al. 2010) are adhered to in this study and adapted for it. The table 2 below outlines the three steps that make up this set of guidelines.

Table 2: SLR Steps (Kitchenham et al. 2010)

Phases	Steps
Planning	Research question Data Sourcing Search string Inclusion and exclusion criteria
Execution	Data extraction Data analysis
Reporting	Quality assessment Type of studies Temporal distribution

2.2.1 Planning phase

The steps followed in the planning phase are treated as follows:

- **Research Question**

The first step in the SLR process is the establishment of a research question. It is used to choose potential primary articles, retrieve the necessary information from them, and analyze it. Previous sections of this paper have described why we choose to focus on the challenges of project management regarding remote working, hence, the research question that is relevant to this SLR is: “What are the project management challenges encountered in remote working environments?”.

- **Data sources and search strings**

To collect relevant articles, the Google Scholar database was included with the search limited to articles published starting from 2019. Literature published before the year 2019 was excluded because this study aims to identify the current state of art of the literature dealing with project management challenges in hybrid workplaces and thus, it is more

relevant to investigate articles published after 2019 where organizations started adopting remote working due to the global pandemic.

All the searches were formulated based on title, keywords, and abstract. The search strings were based on the keywords from the research question : project management, challenges, and remote working. Synonyms and similar spellings of the derived keywords obtained were used.

- Challenges = Limitations, obstacles, constraints, drawbacks, barriers.
- Remote work = Virtual work, virtual teams, distributed teams, remote teams, telework.

And Boolean operators “AND” and “OR” were used in order to combine those keywords. The search string that was used :

“ ALL = (“Project management”) AND (“challenges” OR “limitations” OR “obstacles” OR “constraints” OR “drawbacks” OR “barriers”) AND (“remote work” OR “virtual work” OR “distributed teams” OR “remote teams” OR “telework”)”

Given that Google Scholar does a meta-search that retrieves results from a number of article repositories, the generated keywords were used to carry out searches on this database. It became clear throughout the assessment that we achieved concept saturation during the first 8 to 9 pages of findings. Due to this, we only looked at the first 10 pages out of a total of 1000 potential sources, which were all examined.

The retained papers were selected employing a variety of inclusion and exclusion criteria that were part of our search approach. Table 3 provides a list of these criteria. The number of publications that were retained and met the criteria for inclusion across five-year periods is seven publications and is depicted in table 4.

Table 3: Inclusion and Exclusion criteria of the SLR

Type	#	Description
Inclusion criteria	I1	Paper is concerned with project management challenges
	I2	Findings are generalizable
	I3	Papers published from 2019 to 2023
Exclusion criteria	E1	Paper is not written in English
	E2	Paper is not peer-reviewed (e.g., master’s thesis)
	E3	Paper is not related to the research question
	E4	Duplicate paper

Table 4: Retained publications of the SLR.

Paper	Title	Author	Year of publication
1	Challenges and barriers in virtual teams: a literature review	Morrison-Smith, S., & Ruiz, J.	2020
2	Working in virtual teams: A systematic literature review and a bibliometric analysis.	Abarca, V. M. G., Palos-Sanchez, P. R., & Rus-Arias, E.	2020
3	Virtual teams in times of pandemic: Factors that influence performance.	Garro-Abarca, V., Palos-Sanchez, P., & Aguayo-Camacho, M.	2021
4	Reimagining e-leadership for reconfigured virtual teams due to Covid-19.	Chamakiotis, P., Panteli, N., & Davison, R. M.	2021
5	Covid-19 & Homeworking Project Management Agility as the New Normal.	Sonjit, P., Dacre, N., & Baxter, D.	2021
6	Overcoming Remote Leadership Challenges: Lessons Learned from Covid-19.	Gandrita, D., Gandrita, A., & Rosado, D. P.	2022
7	Challenges and critical success factors of digital communication, collaboration and knowledge sharing in project management virtual teams: a review	Swart, K., Bond-Barnard, T., & Chugh, R.	2022

2.2.2 Process of analysis

This SLR aimed to elicit several themes representing challenges of project management within remote working teams currently discussed in the literature that can be pertinent to the concept of the hybrid workplace. Therefore, the data was analyzed using the Grounded Theory (GT) approach as proposed by Strauss and Corbin (Strauss and Corbin, 1998, 1990). The goal of GT is to develop or find a theory that clarifies a process, an action, or a discussion of a topic (Creswell, 1998). The theory is supported by information gathered from individuals who have gone through the process. GT uses coding techniques, or the division of raw data into different units of meaning, as part of the theory generation process.

Open coding is the first step in the research process, and it entails recognizing, labeling, categorizing, and summarizing the events contained in the text. In other words, the researcher creates categories of information about the incident under study from the initial data gathered. All open codes have interpretations that are as close as feasible to the meaning of the underlying data (Strauss and Corbin, 1997; Corbin and Strauss, 1990b).

From open coding results axial coding, which entails grouping together of open codes, or confining of similar open codes into corresponding axial codes. Instead of searching for full relations, this type of coding can speed up the process (Strauss and Corbin, 1997; Corbin and Strauss, 1990b). The term "concepts" is also used to describe the axial codes. Selective coding is the last step in the coding process and involves selecting a core category and connecting all concepts to that core category.

The main objective is to create a single action that serves as the focal point for everything else. The final theory might be expressed in a variety of ways, including as a narrative statement, an image, or a list of hypotheses or propositions (Creswell, 1998).

We chose GT as the data analysis method for numerous reasons, including:

1. GT is appropriate for our data analysis's overarching objective, which is to find patterns and trends in the qualitative data. This objective makes use of GT's clearly stated coding schemes.
2. Systematic and structured methods for conducting GT are suggested by Strauss and Corbin (Strauss and Corbin, 1990, 1998).
3. There isn't a comprehensive theory in the literature that explains the hybrid project management challenges in hybrid workplaces. The GT theory generating process showed the most promise for developing such a theory.

A summary of the codes emerging during the analysis process can be seen in Figure 5.

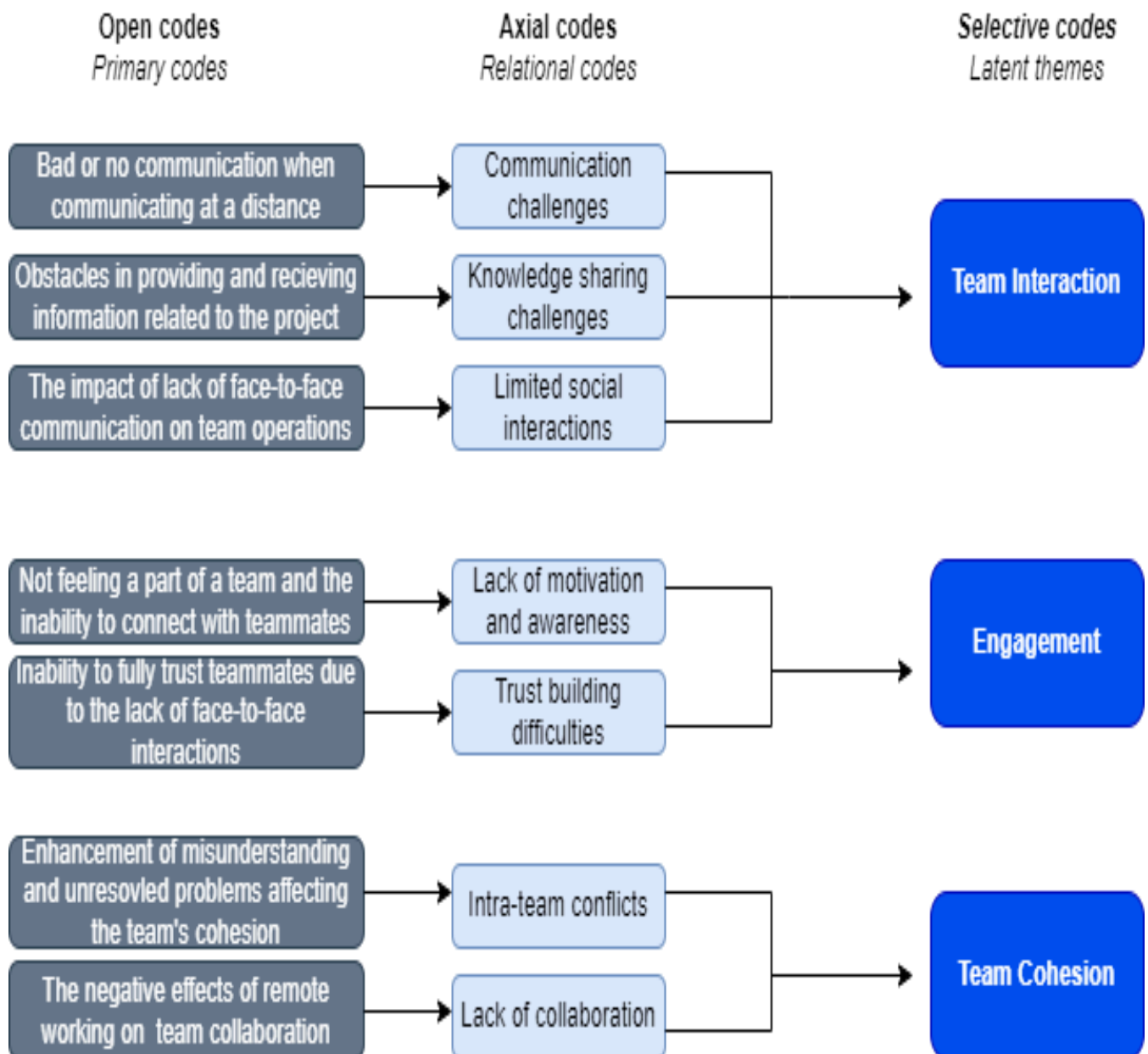


Figure 5: Summary of the coding categories as conducted by the author.

CHAPTER III

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FINDINGS AND DISCUSSION

3 CHAPTER III – FINDINGS AND DISCUSSION

3.1 Findings

In this section, the challenges identified by the thematic analysis of the retained articles that resulted from our SLR are discussed. The main findings of the literature regarding each challenge are summarized and explained in order to gain an overview of the current trends in the existing literature.

Team interaction

A team is defined as a group of people that cooperate to achieve shared objectives and produce the best results; nevertheless, considering the introduction of remote working, teamwork now requires the specification of a clear vision and a willingness to act differently in order to meet organizational objectives (Khattak, 2020). The implementation of this new working method had a significant effect on the dynamics of the team and how teams function since it affected fundamental communication and work processes and posed a barrier to teamwork because of a shortage of physical proximity along with other social interactions, and thus, resulting in multiple challenges affecting team interaction (Gandrita et al., 2022).

Communication challenges

Literature has identified team communication as one of the primary challenges of project management when working remotely (Abarca et al., 2020 ; Gandrita et al., 2022 ; Garro-Abarca et al., 2021 ; Morrison-Smith & Ruiz, 2020 ; Swart et al., 2020). While working remotely frequently offers greater flexibility, research indicates that it is more difficult to manage the communication processes in such teams (Swart et al., 2022).

Abarca et al. (2020), discuss that teams that work remotely rely more on computer-mediated communication technology (CMC) which describes the practice of using computers to facilitate interpersonal communication. This technology consists of tools for text, audio, and video. There are significant obstacles to using this technology such as requiring that all participants be available at the same time. According to the authors, it might also be challenging to determine a remote collaborator's availability for a synchronous encounter because dependence on electronic communication limits informal, spontaneous interaction.

Additionally, literature also looks at how verbal cues are "distorted" and visual cues are eliminated by audio technology. In addition to constricting the visual field, audiovisual technology is known to hide verbal and visual cues. Communication in geographically distributed virtual teams is significantly hampered by CMC's frequent lack of support for non-direct and non-verbal exchanges (e.g., body language, facial expressions), which makes interactions more challenging (Abarca et al., 2020 ; Gandrita et al., 2022 ; Garro-Abarca et al., 2021 ; Morrison-Smith & Ruiz, 2020 ; Swart et al., 2020).

Because each CMC technology offers a different capacity to express verbal and nonverbal cues, the choice of CMC technology has a significant impact on communication. Remote teams that rely on CMC instead of interacting face-to-face are more likely to have lower emotional devotion to their teams and less positive affect. Due to the asynchronous nature of communication medium, members of such teams may also divide their attention

between many activities while taking part in collaborative interactions, which results in a lack of investment in the tasks. Therefore, the use of CMC technology (such as instant messaging) to supplement communication in the absence of face-to-face has a greater impact on performance and constitutes an obstacle for decision-making, which as a result may hinder the advancement of ongoing projects and their management (Abarca et al., 2020 ; Morrison-Smith & Ruiz, 2020 ; Swart et al., 2020).

Knowledge sharing challenges

Literature suggests that teams working remotely must establish methods for exchanging the knowledge, experiences, and insight necessary for carrying out their goals because they are susceptible to communication failures, mistrust, and conflicts. The key components of effective knowledge sharing and communication depend not only on the technology used by those teams but also on the capacity and readiness of team members to participate actively in knowledge sharing (Abarca et al., 2020 ; Morrison-Smith & Ruiz, 2020 ; Swart et al., 2020).

Additionally, Swart et al. (2020), explain that when given the lack of social and informal trust among team members working remotely, they are less likely to exchange tacit information than traditional face-to-face teams. This deliberate withholding of certain information by team members out of a lack of trust and reciprocity is known as knowledge hoarding.

Limited social interaction

Limited social interactions can present challenges in project management when working with remote teams. In teams working on-locate, face-to-face interactions provide opportunities for team members to build relationships, develop trust, and foster a sense of camaraderie (Abarca et al., 2020 ; Morrison-Smith & Ruiz, 2020 ; Swart et al., 2020).

In co-located collaborations, informal discussions (i.e., "coffe chat") frequently takes up to 75 minutes of a workday. These critical exchanges, which frequently take place after meetings or during unexpected encounters in the corridor have a significant impact on team collaboration. As opposed to colocated teams, teams working remotely tend to communicate more formally and with a greater emphasis on work-related problems. This is due to the lack of opportunity for the informal and unintended information exchanges that frequently take place in common areas like the hallway, water cooler, or parking lot (Morrison-Smith & Ruiz, 2020).

Additionally, the reviewed literature highlighted that informal social interaction is crucial in promoting trust and awareness of vital tasks. It has been demonstrated that spontaneous, informal communication helps people feel like they are part of a cohesive team and makes it easier to give each other constructive criticism. These kinds of casual interactions are especially crucial for volatile, dynamic organizations (Abarca et al., 2020 ; Morrison-Smith & Ruiz, 2020 ; Swart et al., 2020).

Thus, Morrison-Smith & Ruiz (2020) explain that social interaction has been characterized as being "crucial" or "indispensable", especially at the beginning of a project because informal communication is linked to social interactions that occur face-to-face. Additionally, face-to-face interaction has been associated with larger levels of group

consensus, higher perceived quality, increased communication, and improved work efficiency.

Engagement

Remote workers perceive working at a distance to be highly unclear, which jeopardizes their engagement (Australian Psychological Society, 2020). Panteli, Yalabik, and Rapti (2019) emphasize the significance of the supporting behavior of the project manager in fostering employee engagement in a remote workplace. These authors found that crucial tools for promoting employee engagement in remote projects include adequate knowledge and financial support, as well as psychological support, encouragement, and feedback. Additionally, they assert that because of the dispersion of remote workers members and their reliance on ICT for communication, increasing employee involvement must be a continuous process that is visible and encouraged throughout all project phases and the lack of such engagement might constitute a challenge to project management. Through reviewing the literature, we were able to identify two challenges of project management related to employee engagement when working remotely.

Lack of motivation and awareness

The 'social facilitation' effects of the motivational sense of other people's presence are widely documented, specifically the finding that people work harder when they are not alone themselves (Abarca et al., 2020).

Literature suggests that collaboration and project success are further complicated by the fact that these effects are more difficult to identify and foster in remote work. In a similar line, a significant obstacle to cooperation is the challenge of keeping track of colleagues' work progress at distant places without being able to casually "look over their shoulder". Co-located workers have increased chances for spontaneous interactions and impromptu talks, which raises awareness, which is likely the root of these issues. The informal visual observations required for maintaining awareness are similarly prevented by distance (Abarca et al., 2020 ; Gandrita et al., 2022 ; Garro-Abarca et al., 2021 ; Morrison-Smith & Ruiz, 2020 ; Swart et al., 2020).

It was also found that employees prefer to be aware of who is using their workspace and use the presence of specific coworkers to direct their work. Additionally, because remote team members cannot see one other's actual effort, they are more likely to rely on perceptions and assumptions that may be prejudiced and inaccurately negative. Furthermore, since remote teams rely on technology to communicate, team members may withdraw from the group due to a diminished social impact in situations where disengagement is not immediately apparent. Another effect of isolation is a decline in team contributions and participation as members of a remote working team grow increasingly separated (Abarca et al., 2020 ; Gandrita et al., 2022 ; Garro-Abarca et al., 2021 ; Morrison-Smith & Ruiz, 2020 ; Swart et al., 2020).

Difficulties building trust

Trust is defined as “one’s psychological state reflecting a strong expectation that the other will not seek self-interest at the expense of their welfare, thus increasing the willingness to accept vulnerability” (Swart et al., 2022, p.64). The attributes of a trusted objective are assessed in terms of trustworthiness. For remote interactions, it's important to note that trust involves more than just humans; it also involves the systems that teams use to manage interactions. In most human-based interactions, trust is crucial for establishing relationships, and how people interact affects how trust is developed (Swart et al., 2022).

Literature suggests that developing trust is one of the biggest issues people experience in remote environments given the decrease in formal and informal interaction time between people. And since most tasks in such environments are carried out autonomously, or by each team member without supervision, trust is viewed as a crucial success component. Team members frequently rely on the functional knowledge of their peers to complete tasks, hence this calls for a high level of trust in one's ability to put that trust in others to carry out duties (Abarca et al., 2020 ; Chamakiotis et al., 2021 ; Gandrita et al., 2022 ; Garro-Abarca et al., 2021 ; Morrison-Smith & Ruiz, 2020 ; Swart et al., 2020).

Additionally, it was found that in remote teams, trust is more difficult to establish and sustain for several reasons, such as the lack of strong relationships typical of co-located teams, difficulties having in-depth personal interactions because of the absence of nonverbal cues, and difficulties determining the intentions of others. In virtual teams, there may be decreased interaction frequency, which affects trust (Abarca et al., 2020 ; Chamakiotis et al., 2021 ; Swart et al., 2020).

Furthermore, although trust builds sequentially in co-located teams, it develops in virtual teams in an ad hoc, unpredictable manner. Since face-to-face communication is not frequent in distance collaborations, workers' decisions about whether to trust a new team member and their ability to express their own trustworthiness are delayed by the absence of body language, facial expressions, etc (Abarca et al., 2020 ; Chamakiotis et al., 2021 ; Swart et al., 2020).

Abarca et al. (2020) explain further the challenge of building trust in a remote environment by analyzing the performance of participants in a social dilemma game who communicated remotely to demonstrate the effect of removing body language, facial expressions, etc. from communication. They found these relationships significantly showed more fragile trust than those who interacted face-to-face. Although audiovisual and audio technologies did have some impact on delayed and fragile trust, text communication was particularly bad at building and keeping it. It was also found that facilitating a first face-to-face interaction at the beginning of a team's relationship will improve trust building. Additionally, trust is impacted by the effectiveness, dependability, and utility of the CMC technology utilized by the virtual team. In order to build trust, the researchers suggest that it is crucial for team members to possess certain personal qualities, such as ability, integrity, competence, fairness, honesty, and openness.

Team cohesion

A team's cohesion is its sense of harmony. Cohesion is crucial for virtual teams and has been linked to better performance (Lurey and Raisinghani, 2001; Maznevski and Chudoba, 2000) and satisfaction (Chidambaram, 1996). In the context of project management, a lack of team cohesion could present a challenge.

The physical distance between team members can result in a psychological gap between them, according to Salisbury et al. (2006) classical research. Compared to on-site teams, Salisbury et al. (2006) hypothesized that the virtual team's physical dispersion may hinder the establishment of cohesion. Virtual team members could also have diverse ideas on what cohesion is. In other words, the way that team members communicate, which is the foundation of cohesion, influences the sense of cohesion (Abarca et al., 2020). The challenges affecting team cohesion according to the reviewed literature are collaboration challenges and intra-team conflicts.

Collaboration challenges

Literature suggests that collaboration is significantly affected by remote working due to the physical separation of team members and the reliance on ICT tools. Remote working reduces the opportunities for spontaneous interactions, informal discussions, and impromptu collaborations that naturally occur in a shared physical workspace. The absence of face-to-face contact can lead to decreased collaboration and hinder the exchange of ideas, brainstorming sessions, and collective problem-solving (Abarca et al., 2020 ; Sonjit et al., 2021 ; Swart et al., 2020). Additionally, interactions on digital collaboration platforms have been linked to a decreased level of collaboration among teams working remotely (Swart et al., 2020).

In their qualitative research aiming to identify the challenges to project management when working remotely, Sonjit et al. (2021) found that due to the limitations of face-to-face interactions, the respondents acknowledged that it was difficult for them to foster a collaborative environment during an online meeting. They agreed that the visibility restrictions in online communication platforms, particularly in big group meetings, could have an impact on collaboration because team members frequently feel psychologically uneasy speaking up in a virtual setting. Therefore, collaborative and operational routines are directly impacted by remote project management methods.

Intra-team conflicts

Remote working teams have greater conflict rates and are more prone to task- and interpersonal-based conflict, according to the findings of several researchers (Abarca et al., 2020; Gandrita et al., 2022). Abarca et al. (2020) suggest that compared to co-located teams, teams working remotely are more vulnerable to the "extreme" or "detrimental" effects of conflict. This effect is probably due to the data showing that conflict in remote teams is known to worsen and frequently goes unnoticed and ignored for extended periods of time.

In their research paper, Abarca et al. (2020) explain with a case study how a group of multinational collaborators who were dispersed across four locations "fought among themselves as if they were enemies". The interviews conducted revealed that the group did not act or feel like a single, cohesive team because it consisted of four groups working under one manager.

These concerns are comparable to those brought on by distant communication. As a result of presumptions and improperly perceived messages, conflicts frequently happen (Abarca et al., 2020; Gandrita et al., 2022).

Additionally, literature shows that lack of information and misunderstandings across geographically dispersed sites cause teams to make negative assumptions about their other teammates. These kinds of intra-group conflicts can significantly affect remote collaborations. Us-versus-them mentalities frequently result in incomplete knowledge, which then causes less cohesion and incorrect attributions. Moreover, intra-team conflict results in issues that slow down job progress and complicate problem-solving (Abarca et al., 2020 ; Chamakiotis et al., 2021 ; Gandrita et al., 2022 ; Morrison-Smith & Ruiz, 2020).

3.2 Discussion

The objective of this research is to identify the challenges related to hybrid project management in a hybrid working environment. Since, to the author's knowledge, there is no existing literature addressing our targeted topic, a SLR was conducted to illustrate the existing challenges of project management within remote working teams. The findings are relevant to our research question since a hybrid workplace model relies on both remote and on-site work as previously stated in the literature review. From the conducted SLR we found that team interaction challenges, engagement challenges, and team cohesion challenges represent obstacles in project management within remote working teams.

Additionally, to confirm our findings and to test their relevancy in a hybrid working environment where hybrid project management practices are employed; three interviews were conducted with two managers and an employee working in an IT organization that has fully implemented the hybrid working model and follows hybrid project management practices.

When asked about the challenges faced while managing a team in a hybrid workplace, particularly with regard to hybrid project management, G.L, who has been responsible for managing a team of 10 people for a period of five years shared that *"I have been managing teams before remote work was globally adopted, even if in IT projects I have previously worked remotely but never was I in charge of managing remotely, this is until the Covid 19 pandemic happened where we had to introduce new ways of working that were eventually adopted later on. For our case, since we work on IT projects, we have always been familiar with agile methods I might say, it's very convenient for IT projects and make it easy for us to track the progress of our teams and to plan the execution of the project. It is true that we do not work in 100% agile methods so I would say we do indeed follow a hybrid project management approach."* The interviewee gave us more insight on the integration and adoption of agile methods under the concept of hybrid project management and by saying: *"I think in the context of the pandemic, a lot of companies started switching or integrating agile methods to their project management practices because they understood the necessity to build methods to adapt to change quickly and to become resilient. For our company, since we work in IT as I said, we had quite enough experience with agile methods so implementing them wasn't a problem for us, however, switching to hybrid work came with a couple of difficulties for me I might say. Well for our company and the case of many companies I would say, hybrid working is very flexible and so when we switched to that working mode, I was seeing my team two days a week as opposed to five days a week. That's three days where I*

have no direct contact with them except for the daily meeting we have at the beginning of the day. One of the main challenges I encountered and that for me presented an obstacle to the progress and management of the ongoing projects was communication, and you know that in agile projects communication is very important. Personally, I wasn't feeling close to my team as I couldn't see them personally." He then added "I'm used to being close to my team, as a manager, it is important for me to regularly check on the people I'm supervising. When people were working from home, I couldn't tell how they were feeling, if they understood the information shared with them, if they had issues with the assigned tasks, or had problems dealing with the project they were working on. I would call and they would sometimes share the difficulties they encountered but even after I tried providing help and support, I couldn't tell if the issue was clearly addressed simply because I couldn't see them and that face-to-face interaction where people feel at ease and more confident to share and ask questions wasn't there anymore. A lot of people think that managing people who are working from home is easier, but you would be surprised to know that it is two times harder because people who are working remotely don't communicate well or just don't feel the need to put in the effort to communicate their concerns which makes it harder to get the needed feedback to follow the advancement of the project and get an accurate view on the completion and advancement of tasks. So as a manager, I must work twice as hard and be way more implicated than if I was fully working on-site with my team."

The manager was also asked about how this affects the overall advancement and management of a project in a hybrid workplace *"Well when you have people who are not able to complete a task or who lack information or who have difficulties finishing their work it delays the advancement of the overall project for sure. Communication is very important for any project and when there is trouble communicating it makes it harder for the whole team to move forward. One example I can cite is when we started working on a software development program for a client, we had exactly six months to provide the first version and it was a very huge project for us. Some members of my team had weekly tasks to do, when we gathered on-site, I organized a meeting to talk about the advancement of the tasks and whether they were completed or not. Three members out of fifteen couldn't accomplish their tasks but still didn't communicate or reach out to their teammates because they felt they weren't available and couldn't fulfill their requests. I had talked to those three people during the remote working days, but I couldn't detect that they were having difficulties, if we were working onsite for the whole week, I would've for sure been able to get a word out of them or figure it out based on body language or facial expressions cues. Anyway, thankfully I organize meetings regularly and this helps me stay on track and monitor my team. But a manager needs to be close to his team, you need to deal with a human, not a text typed on a computer or a voice ringing through a screen."*

The second profile interviewed was Y.B, a manager who has been working as an IT project manager for 15 years and who has managed multiple teams of different sizes during his career. When asked about the challenges faced while managing a team in a hybrid workplace, particularly regarding hybrid project management he informed us that *"I have managed a lot of teams across my career, the thing is when you work in IT, you kind of are exposed a lot to remote working and a lot of agile methods that are implemented in your project management strategies. If it's not within your own team, it's you working with people from across the world. So, say, for IT organizations and IT project managers, working remotely and with hybrid project management methods isn't a new practice and I think that with remote working becoming mandatory during the pandemic, the fact that we had already dealt with such working models served us managers working in IT as a big advantage. I did*

not notice, for me personally, any change in my working habits/practices, and could approach well managing remotely when I needed to start doing it regularly. However, it is true that the challenges that came with managing people remotely, whether it was before or after the pandemic were related to communication between the team and motivation.”

He then elaborated by saying that “When you are working with people you don’t see, even if it’s three days a week, you quickly lose motivation and become less engaged in your work. Because you are not interacting and exchanging with your teammates, and because you don’t know who is doing what and the advancement of the work regarding the project, employees tend to show less implication to finishing their work. Also, one important point is that since people are working from a distance, we try to assign individual tasks that don’t require group work or people consulting each other a lot to reduce communication hazards. But even with those dispositions, I have already had complaints about employees feeling isolated and that they were losing motivation due to them not really feeling like they are part of an active team that is regularly exchanging and communicating. This for me was a problem, because when I was with my team onsite, I noticed that they were much more productive when they were exchanging and working together, even when they took coffee breaks, they could discuss the challenges and difficulties they had when completing their tasks. So, to answer your question I would say the main challenges for me when managing a project in a hybrid environment are keeping my team motivated on the days they are working remotely where there is a lack of social interaction and improving communication between my team members because they don’t exchange and interact as well as when they are on site.”

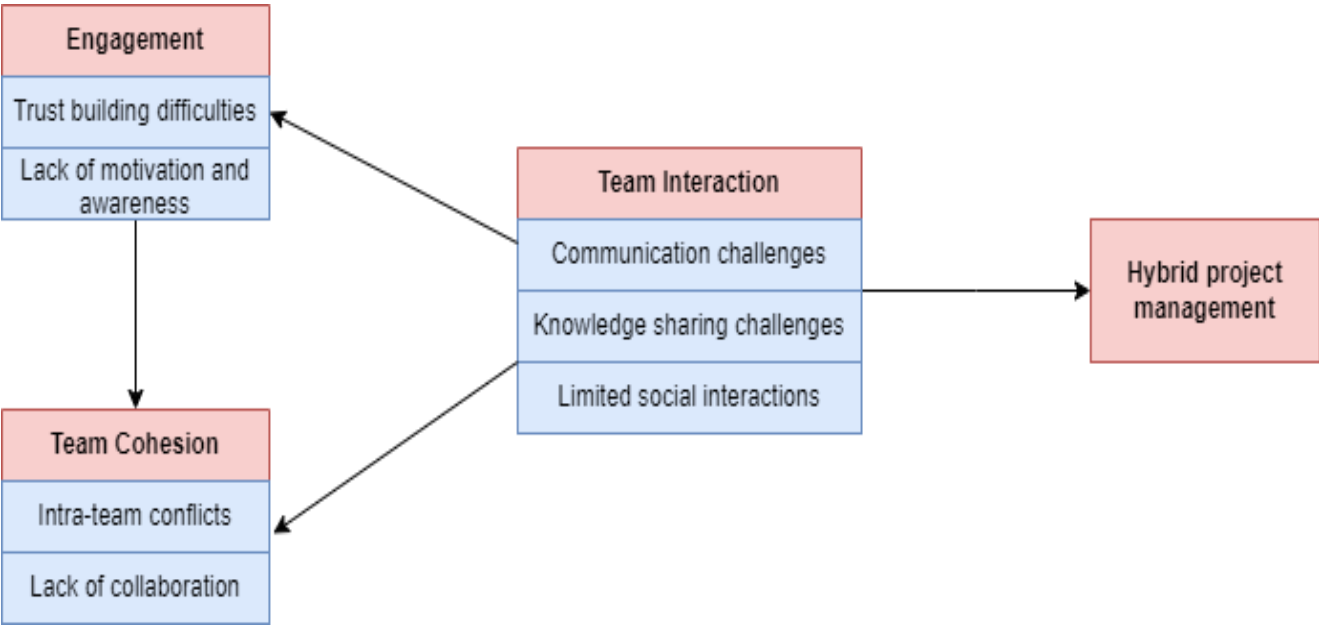
The third person interviewed was N.Y, an employee working as an IT consultant for two years and who started working after the Covid-19 pandemic when almost all organizations adopted the hybrid workplace model. When asked about the challenges faced working in a hybrid workplace, particularly regarding project management he informed us that “ *I have been working with hybrid project management methods ever since I joined the company, I’m currently part of. I am SCRUM certified and so is the rest of the team I work so we are pretty familiar with agile methods which is logical because we work on IT projects. At first, I saw working remotely that an amazing opportunity, I was really happy to be able to work from home and commute to work only two days a week, and I loved the fact that it brought me a lot of flexibility. But since I started working, I work mainly remotely, sometimes I only go once a week on site, I find it a bit hard to cope. I feel like I am alone and feel very isolated from my team. I also don’t feel like I have enough information to make progress regarding my work which defeats the purpose of agile practices since we are supposed to communicate regularly and I have days where I’m less motivated to work especially when I don’t have a clear perception of the progress of my teammates on their tasks, I would tell myself that I’m sure they are in the same state of mind as me. However, If I know what exactly and in detail what I have to do, I find it convenient to work from home because I will be fully focused on my task and won’t be easily interrupted, but when I don’t really know what I have to do, when I’m feeling a bit lazy, when I’m a little bit tired, when I have a lot of housework to do, when I have a lot of things to think about my personal life and issues, I feel I’m way less focused and efficient when I’m working from home and I feel the necessity of being in an environment where I can exchange with people.”* He also added that “*The main challenges for me are communication, motivation, efficiency and the lack of social interaction. However, I feel like I am efficient when I have the required information to work, and I know exactly what to do because I will not be interrupted, and I can work and deliver my job on time and won’t jeopardize the advancement of the project. This is opposed to if I were in the office, and we*

took coffee breaks which would make me waste some time. But when I need to ask something and when I need answers, I prefer to be in the office, because it is instant, I can go up to someone's desk ask the question and get the answer immediately. I feel like knowledge sharing is way easier and more efficient when we are working on-site."

The interviewee was also asked about how he communicated these challenges and difficulties to his manager, to which he replied: *"To be truthful, I have talked about it briefly. And there's one thing for me personally, I don't really like change. So, I always tried to talk about it as less as possible because I knew if I would bring it up frequently my manager would ask me to come more often to the office and I do not want that. Even though my manager was always available and was frequently implicated, I have sometimes talked to him about how I felt isolated and unmotivated, but I made sure I didn't sound like I was really impacted by those problems because I didn't want to be asked to work fully on site. But he knows that I have organization problems, so he already asks and checks after me. But to be honest, I don't know how things could be improved. Now that you're talking about it, I never tried to think of solutions to overcome such challenges. We have all the communication tools such as Teams, slack, confluence, etc but really, it's how you use them. I think it could be possible to make meetings more interactive and engaging but then again, me personally, I'm against managers making it mandatory for you to open your camera. But sometimes seeing your teammates on camera makes it feel like there's more proximity and immersion. I think we need to feel more proximity."*

From the conducted interviews, we can see that the findings of the literature are supported by both employees and managers working in a hybrid workplace following a hybrid project management approach. To answer our research question, we proposed a theoretical model based on our findings figure 6, examined the corporation between the variables by addressing the existing theories and explained how it can be tested by further research.

Figure 6: Theoretical framework illustrating the challenges of hybrid project management in a hybrid workplace made by author.



3.2.1 The mediating role of Team Interaction

Regular team interactions (especially through face-to-face interactions) facilitate collaboration in remote working teams (Cundill et al., 2019) and are credited with having the power to significantly strengthen the bonds between team members on both a professional and social level (Kiesler and Cummings, 2002). These interactions also foster a worker's sense of team identity and awareness of group activities (Ågerfalk et al., 2005), as well as mutual trust and understanding, both of which are essential for preventing conflicts (Armstrong and Cole, 1995). Additionally, face-to-face interaction has been associated to larger levels of group consensus, higher perceived quality, increased communication, and improved work efficiency (Gibson et al, 2014).

For this reason, it is advised by numerous authors that members of remote teams meet in person whenever possible, especially during the first launch of a project (Kirkman et al., 2004), when doing so can build a durable bridge across teams when working remotely. Therefore, it should come as no surprise that enhancing team interaction and promoting face-to-face communication is essential for project success (Holmstrom et al., 2006).

Additionally, knowledge sharing and online alliances in organizational teams are mostly governed by issues of conflict and trust. Individuals who have high degrees of mutual trust are more likely to share information and resources and take shared risks (Chen & Chen, 2009). Fostering the development of trust and preserving and expanding it during various stages of the team life cycle is one of the fundamental issues remote teams face. A typical remote working team lifespan has five stages, according to Greenberg et al., (2007): team formation, team inception, team organization, team transition, and task completion. As the basis of trust between team members is often built during the inception and organization phase, it is crucial to use the right channels of communication and collaboration to enhance team interaction in order to foster trust (Greenberg et al., 2007).

More importantly, Shamim (2022) argues that team interaction through communication is essential, especially when it comes to the project execution phase and affects the overall project management process. Due to the one-on-one interaction of teams or personnel completing the real activities required for the project's completion, communication is crucial throughout this stage of project management. Communication in the context of a project includes both internal and external communication. Additionally, he explains that the majority of businesses worldwide lacked experience with remote work. The loss of direct interaction was the difficulty with remote communication. This change had a significant negative impact on the process of developing the communication strategy that was addressed in the project planning stage and was intended to be used throughout the project's life cycle. A few components of the informal communication structure were lost as a result of virtual communication. These included having routine office conversations with the project team to gain context and insight into the project's accomplishments. Additionally, because of the additional effort and focus required for online communication, the project wears out more quickly. Additionally, it was difficult to come to an agreement on certain aspects of the project and would typically take more time than face-to-face discussions, which were held in boardrooms prior to the pandemic widespread (Hristov, 2021).

3.2.2 Relationship between Engagement and Team Cohesion

In the context of our research, engagement is linked to trust building and motivation while team cohesion is linked to collaboration and intra-team conflicts. According to previous research (Breuer et al., 2016), trust is the primary factor that is essential for any aspect of collaboration. This also applies to team effectiveness, since trust affects team members' willingness to ask for assistance, provide feedback, and openly discuss problems and conflicts (Breuer et al., 2016). Trust is viewed as the 'glue' that binds collaborations together and has a significant impact on team performance (Crisp & Jarvenpaa, 2013). Developing mutual trust and familiarity with collaborators on a personal level crucial to a successful collaboratio (Treinen & Miller-Frost , 2006).

Positive characteristics of collaboration are related to trust which enables employee engagement. For instance, trust has a significant impact on team and project commitment (Buvik & Tvedt, 2017). Both the prevalence of normative behaviors and the infrastructure for collaboration can be improved by trust (Crisp & Jarvenpaa, 2013). Building trust early on in a virtual cooperation is crucial for fostering effective group functioning and the capacity to handle social interactions, according to Maurping and Agarwal (2004). Furthermore, Members of these teams gain the confidence to engage in normative behaviors that support both trust and subsequent performance as a result of their early acquisition of trust (Crisp & Jarvenpaa, 2013).

Hence, collaboration decreases as a result of this difficulty in building trust (e.g., (1) deterioration of task coordination and cooperation (Olson & Olson, 2006), (2) decreased desire to communicate (Herbsleb & Grinte, 1999), (3) inability to systematically deal with unstructured tasks and unpredictability (Jarvenpaa & Leidner, 1998), (4) fewer members eager to take the initiative (Jarvenpaa & Leidner, 1998), (5) lack of compassion for teammates (Kiel, 2003), (6) a reduced amount of feedback from collaborators (Jarvenpaa & Leidner, 1998).

Furthermore, multiple research (such as Holmstrom et al., 2006; Kotlarsky & Oshri, 2005) demonstrated that low trust brought on by distance has an impact on workers' identification of themselves as members of a team that works remotely. These problems have a negative impact on collaboration and might slow down or even halt project progress.

Additionally, Dourish and Bellotti (1992), who analyze awareness and motivation through a case study studying ShrEdit (McGufn & Olson GM, 1992), a text editor that allows several users concurrently, go into great detail about the significance of awareness in collaboration. In this essay, awareness is defined as "an understanding of others' activities that gives your own activity a context" (Dourish & Bellotti, 1992). Dourish and Bellotti go on to say that this context is essential for ensuring that each member's contributions are compatible with the group's overall activity and that it is crucial for evaluating each individual's actions considering the objectives and development of the group. People are further enabled to minimize duplication of effort in this context. Without this insight, collaborative work is significantly delayed (Olson & Olson, 2006). The findings of the study also indicate that when team members working remotely are fully aware of their teammates activities and are able to share and exchange information effectively among each other, they tend to be more motivated and willing to contribute to the team's goals.

3.3 Application of the theoretical framework: an illustration

In a study aiming to identify challenges of hybrid project management in a hybrid workplace environment, the theoretical framework can be applied to understand the relationships among the variables of team interaction, engagement, and team cohesion. The variables in the framework are as follows:

1. **Team Interaction:** This variable encompasses communication challenges, knowledge-sharing challenges, and limited social interactions. It serves as the independent variable in the study, indicating its potential influence on engagement and team cohesion. Team interaction captures the dynamics of how team members interact, collaborate, and communicate in a hybrid workplace setting.
2. **Engagement:** As a dependent variable influenced by team interaction, engagement encompasses factors such as lack of motivation and awareness, as well as trust-building difficulties. The study explores how these challenges arise due to team interaction issues and their impact on individual engagement levels. It examines how team members' motivation, commitment, and level of awareness are affected by the quality of team interaction in a hybrid workplace.
3. **Team Cohesion:** This variable is also a dependent variable, influenced by both team interaction and engagement. It represents the level of collaboration and harmony within the team, and it includes aspects such as lack of collaboration and intra-team conflicts. The study aims to understand how team interaction and engagement challenges impact team cohesion in a hybrid workplace and how they contribute to or hinder successful project outcomes.

To apply this theoretical framework, a qualitative approach can be followed. Research methods such as interviews, focus groups, or observations can be used. These methods allow for in-depth exploration and understanding of the challenges faced in hybrid project management within a hybrid workplace. By collecting rich qualitative data from participants, researchers can gain insights into the specific instances and experiences related to team interaction, engagement, and team cohesion.

To further enhance the qualitative study, it is essential to consider the profile of the individuals to be interviewed. In this case, it would be valuable to interview a diverse range of participants who have relevant experience and insights regarding hybrid project management in a hybrid workplace environment. Interviewing IT professionals might be more convenient for the sake of this study since they are early adopters of remote working and hybrid project management methods (de Souza Santos & Ralph, 2022). The following profiles could be considered:

- **Project Managers:** Interviewing project managers who have led teams in a hybrid workplace setting while following a hybrid project management approach can provide valuable perspectives on the challenges they have encountered and their strategies for managing team interaction, engagement, and cohesion. Their insights can shed light on the specific dynamics and complexities of overseeing projects in a hybrid work environment.
- **Team Members:** Interviewing team members who have worked in a hybrid workplace arrangement and following hybrid project management strategies can provide valuable insights into their experiences of team interaction, engagement, and cohesion. Understanding their perceptions, challenges faced, and suggestions for improvement can provide a holistic view of the dynamics within the team and how it impacts project management.

The study can analyze the collected data by identifying recurring themes, patterns, and relationships between the variables. This analysis will provide a deeper understanding of the challenges faced by project managers and team members in a hybrid workplace, as well as the interplay between team interaction, engagement, and team cohesion.

The findings from the study can contribute to the development of strategies, interventions, and recommendations for improving hybrid project management practices in hybrid workplace environments. They can guide organizations in addressing the identified challenges, fostering effective team interaction, enhancing engagement, and promoting strong team cohesion for successful project outcomes in a hybrid work setting.

CONCLUSION

This research has explored the challenges of hybrid project management in a hybrid workplace, aiming to shed light on the complexities and issues faced by organizations operating in this dynamic context. By employing a combination of literature review, systematic literature review (SLR), and explanatory interviews, a comprehensive understanding of the challenges has been achieved, leading to the development of a theoretical framework for testing.

The findings of the research indicate that hybrid project management in a hybrid workplace presents multifaceted challenges. Communication challenges, lack of collaboration, knowledge sharing difficulties, limited social interactions, lack of motivation and awareness, trust building obstacles, and intra-team conflicts were identified as key areas of concern. These challenges can impede project success, hinder effective teamwork, and impact overall organizational performance.

The developed theoretical framework provides a structured understanding of the interplay between these challenges and their interconnectedness within the hybrid project management context. By testing this framework, organizations can gain insights into specific areas requiring attention and develop targeted strategies to address the identified challenges.

However, it is important to acknowledge the limitations of this research:

- The systematic literature review was restricted to the Google Scholar database only which generated a very low number of articles when we excluded those that weren't in the perimeter of the study.
- The developed theoretical framework relied on the SLR, and the explanatory interviews conducted that were context-specific since we only interviewed people working in IT organizations, and thus the framework may not be directly generalizable to all organizations or industries.
- The sample size and selection of interview participants may also limit the transferability of the findings since we only interviewed 3 professionals.
- Additionally, the research focused on identifying challenges rather than providing comprehensive solutions, leaving room for further investigation and practical implementation.

The theoretical implications of this research contribute to the existing body of knowledge on project management challenges in a remote workplace (Abarca et al., 2020 ; Chamakiotis et al., 2021 ; Gandrita et al., 2022 ; Sonjit et al., 2021 ; Swart et al., 2020) and represent, to the author's knowledge, the first study discussing hybrid project management in a hybrid workplace setting. The identified challenges and the developed framework provide a foundation for future research in this domain. Researchers can further explore the nuanced dynamics of these challenges, develop more targeted strategies for overcoming them, and investigate the impact of contextual factors on their manifestation.

In terms of future research, it would be valuable to conduct longitudinal studies to observe the evolution of challenges in a hybrid workplace over time. Exploring the effectiveness of specific interventions and strategies for addressing the identified challenges can also provide practical insights for organizations.

In conclusion, this research contributes to the understanding of the challenges faced by organizations practicing hybrid project management in a hybrid workplace. The developed theoretical framework offers a structured approach to addressing these challenges. By recognizing the limitations and considering the theoretical implications and future research areas, organizations can enhance their project management practices and navigate the complexities of the hybrid workplace more effectively.

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