

THE IMPACT OF HYBRID WORK ARRANGEMENTS ON EMPLOYEE
ENGAGEMENT AND PERFORMANCE

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ABSTRACT

With the decline in COVID-19 cases and the vaccination of the majority of employees, employers are seeking to reintegrate their workforce into the office. However, technology companies attempting to bring employees back have been forced to put their plans on hold due to resistance from employees. Many organizations are offering hybrid options to employees, encompassing a combination of remote work and on-site office presence throughout the workweek. The hybrid model is widely anticipated to shape the future of the workplace as it enables employees to benefit from the advantages of both remote and on-site work. However, this model presents several uncertainties, and its implementation is more intricate compared to a fully remote setup. A research study based on evidence, which could offer insights for well-informed decision-making, is currently absent.

I have investigated the following as part of my research: a) the direct effect of remote work on Leader-Member Exchange (LMX), communication frequency, and knowledge sharing; b) the direct effect of remote work on employee engagement and performance; and c) the indirect effect of remote work on employee engagement and performance mediated by LMX, communication frequency, and learning. This study used linear regression analysis on survey data collected from a sample of 446 professionals working with Innominds Software Pvt. Ltd. (Innominds). The analysis revealed that remote work intensity has: a) a positive effect on LMX and knowledge sharing; b) a negative effect on communication frequency; c) no direct effect on employee engagement and performance; and d) no indirect effect on employee engagement and performance when mediated by LMX, communication frequency, and knowledge sharing.

The implications of this research will be valuable for organizations seeking to optimize their remote work policies and practices. By understanding the mediating role of LMX, communication frequency, and knowledge sharing, organizations can tailor their approaches and initiatives to maximize the benefits of remote work arrangements, ultimately leading to improved job satisfaction, employee engagement, and performance.

Keywords: remote work, hybrid work, employee performance, employee engagement, leader-member exchange, communication frequency, knowledge sharing

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I. INTRODUCTION

The traditional concept of work, characterized by employees commuting to a central office location, has undergone a significant transformation in the recent decades. This work arrangement has gained substantial attention among academicians and practitioners across various geographies. The advancements in technology and the changing nature of work have facilitated the adoption of remote work arrangements, enabling employees to perform their duties outside the traditional office environment (Allen et al., 2015). The COVID-19 pandemic further accelerated the widespread implementation of remote work as organizations worldwide sought to ensure business continuity while prioritizing the safety and well-being of their employees. Several studies (Barrero et al., 2020; Choudhury et al., 2021) and employee surveys conducted during the pandemic suggest a rise in productivity when working remotely. Simultaneously, studies (International Labor Organization, 2020) highlight that employees encounter feelings of isolation, digital fatigue, challenges in distinguishing between professional and personal lives, and a lack of communication, all of which impact engagement and organizational culture (Jacks, 2021). With conditions returning to normalcy, companies are attempting to bring employees back to work. Financial institutions like JPMorgan want bankers back in the office five days a week¹ but many technology firms are forced to put such plans on hold. Apple backed off its return-to-work policy when met with resistance, email protests, and resignations after announcing to work from the office for three days a week²; over 800 employees of an edtech start-up, WhiteHatJr, resigned after being asked to 'work from the office'³. Firms like Google expect employees to be onsite only part of the week⁴; Indian IT services companies like TCS announced a plan to be 75% remote by 2025⁵ and Wipro wants its employees to work from the office for three days a week⁶. Although the pandemic induced a shift to remote working, recent studies indicate that work from home (WFH) will continue beyond COVID times due to the increase in relative productivity and efficiency (Barrero et al., 2020). Looking at the post-pandemic

¹ <https://www.reuters.com/business/finance/jpmorgan-managing-directors-asked-work-office-five-days-week-memo-2023-04-12/>. Accessed on 18th August 2023.

² <https://www.bbc.com/worklife/article/20210618-the-workers-pushing-back-on-the-return-to-the-office>. Accessed on 18th August 2023.

³ <https://economictimes.indiatimes.com/news/company/corporate-trends/over-800-employees-of-whitehat-jr-resign-when-asked-to-work-from-office/articleshow/91541523.cms?from=mdr>. Accessed on 19th August 2023.

⁴ <https://blog.google/inside-google/life-at-google/hybrid-approach-work/>. Accessed on 20th August 2023.

⁵ <https://www.businesstoday.in/latest/corporate/story/75-tcs-staff-to-work-from-home-by-2025-r-d-to-occupy-vacant-office-space-279170-2020-11-20>. Accessed on 20th August 2023.

⁶ <https://www.cnbc18.com/education/wipro-wants-employees-back-in-the-office-three-days-a-week-14878661.htm>. Accessed on 20th August 2023.

future, organizations are moving to hybrid working models, offering work from home (WFH) and work from anywhere (WFA) programs blended with onsite work (Choudhury et al., 2021). The hybrid model is widely anticipated to be the future of the workplace because it allows employees to get the best of both remote and onsite work. According to a recent study conducted by McKinsey & Co. (Smet et al., 2021), the implementation of the hybrid model is notably more intricate than that of a fully remote setup. This complexity arises from various uncertainties associated with the hybrid model, which give rise to numerous inquiries such as: How many days per week is ideal to work from the office? Who decides this ratio—the organization or the employees? What work is suitable for working remotely? How do you balance the experience between those who work onsite and those who don't? Can leadership communicate with remote workers as effectively as they do with people in the office? How does this affect knowledge sharing among the team members? Numerous additional queries of a similar nature lack straightforward solutions, and the absence of evidence-based guidance further compounds the challenge of making informed decisions. Therefore, the McKinsey report advises organizations to be flexible, experiment with different options, and learn from the data provided by these experiments.

Prior to the pandemic, research to understand the impact of remote working had occasionally yielded conflicting results, indicating a “telecommuting paradox” (Gajendran & Harrison, 2007). Many organizations have been progressively promoting remote work while actively seeking solutions to tackle the accompanying difficulties. The existing body of research related to remote work has focused on studying the antecedents and consequences for individual and organizational outcomes while transitioning from an onsite work model to a remote work model. The premise for these studies is that work is predominantly performed onsite, and remote work is an alternate work arrangement positioned as an incentive or an optional advantage for employees. The current context requires exploring the challenges of transitioning from a remote work model to a hybrid work model. These challenges are unfamiliar situations for many organizations and, hence, a subject of interest in the academic and practitioner worlds. As these models are still in their nascent stages, there is limited research to understand the consequences. With inconclusive inferences, there is a need to understand the impact of varying remote working schedules on individual outcomes. The key purpose of this study is to explore various employee outcomes in the context of an emerging hybrid work environment.

Therefore, a key contribution of this thesis is to understand the effect of remote working on employee engagement and performance. Employee engagement, characterized by

a strong emotional connection and commitment to one's work and organization, has consistently been linked to positive outcomes, including higher productivity, lower turnover, and increased job satisfaction (Susan, 2012). The hybrid work model brings unique considerations to employee engagement. Investigating the relationship between remote work arrangements and employee engagement can provide valuable insights into creating an environment that fosters strong employee engagement and supports organizational success. Employee performance is a critical aspect of organizational success (Siddiqui, 2014). However, the traditional metrics used to measure performance may require reconsideration in the context of hybrid work. The flexibility of remote and on-site work presents new opportunities and difficulties for employees. Therefore, examining the impact of remote work arrangements on employee performance is essential to identifying the drivers and barriers to individual and team effectiveness in this evolving work landscape.

Understanding how LMX, communication frequency, and knowledge sharing affect the previously mentioned phenomena is another crucial contribution of this study. Leaders play a pivotal role in establishing and maintaining high-quality relationships with their subordinates, thereby fostering a climate of trust and cooperation. These relationships, known as the Leader-Member Exchange (LMX) (Graen & Scandura, 1987), are broadly recognized as a crucial factor influencing various organizational outcomes, such as reputation and retention, and individual outcomes like job satisfaction, performance, career success, and commitment (Henderson et al., 2009). Communication frequency, as a vital component of LMX, enables the flow of information and ideas between leaders and their team members, shaping the overall climate within an organization. The level of communication frequency within the work environment directly influences the degree of knowledge sharing among employees, ultimately impacting organizational effectiveness (Golden & Raghuram, 2010). Prior studies indicate that at a high level of LMX, there is improved communication, resulting in better performance ratings among the members. (Kacmar et al., 2003).

In conclusion, this research seeks to investigate the implications of remote working on employee engagement and performance, including the direct and mediating effects of LMX, communication frequency, and knowledge sharing. This study aims to shed light on the dynamics of remote work and its consequences for employees and organizations. The findings of this research will contribute to the understanding of remote work practices and assist organizations in developing strategies to enhance employee performance and engagement in this evolving work landscape. The study was conducted at Innominds Software Pvt. Ltd. (Innominds), a product engineering services company with an employee

base of 2000+ across multiple offices in India and the US. Innominds started the return to office initiative, asking its employees to work two days from the office.

II. THEORETICAL MODEL

Figure 1 presents the theoretical model for my study. I developed my model by leveraging well-established theoretical frameworks like LMX theory (Graen & Uhl-Bien, 1995), employee engagement theory (Schaufeli et al., 2019), and incorporating insights derived from previous studies on telecommuting, LMX, communication patterns (Gajendran & Joshi, 2012), and knowledge exchange (Golden & Raghuram, 2010). By amalgamating findings from numerous investigations that have explored the intricate dynamics between remote work and employee outcomes such as job satisfaction, performance, and career advancement and concurrently considering mediating factors like Leader-Member Exchange (LMX), autonomy, and work-family conflict (Gajendran & Harrison, 2007), I have established a structured methodology to unravel these intricate interrelationships. By incorporating mediating factors, my model provides a holistic understanding of how remote work influences engagement and performance, shedding light on the nuanced processes through which these effects manifest.

In subsequent sections of this study, I will explain the identification of pivotal constructs, the formulation of hypotheses, the rigorous testing of hypotheses, and the meticulous analysis of results.

Remote work intensity: Extending the broader concept of telecommuting (Gajendran & Harrison, 2007), this can be characterized as a quantitative measure of the frequency with which individuals engage in remote work. Remote work intensity is the extent to which employees or individuals choose to perform their work responsibilities from a location outside the traditional office environment, commonly their homes or other remote settings under hybrid work arrangements. Remote work intensity is expressed in terms of the number of days employees work remotely in a workweek. For instance, if an employee works remotely for three out of five workdays in a week, their remote work intensity for that week would be 3 out of 5, or 60%.

Connectivity: Based on the theoretical foundations of the LMX theory and communication frequency (Gajendran & Joshi, 2012), connectivity embodies a dynamic and symbiotic relationship. Connectivity refers to the degree and quality of interactions, the level of trust and openness, exchanges, and communication occurring between leaders and their team members within the organizational context. By fostering high-quality LMX relationships and promoting regular and meaningful communication, organizations can cultivate a positive and productive work environment that benefits both leaders and team members.

Learning: This refers to the dynamic and interactive process by which individuals within a group exchange information, insights, and expertise, resulting in the acquisition of new knowledge, skills, and understanding. This collaborative approach to learning emphasizes the collective intelligence and experiences of group members as they actively share and disseminate their expertise and perspectives (Golden & Raghuram, 2010). This fosters a rich learning environment that promotes growth, adaptability, and innovation in an organization.

III. THEORY AND HYPOTHESIS DEVELOPMENT

Remote Working

The transition from traditional onsite and co-located work began in the 1970s with the concept of *Telecommuting*, a term coined by Jack Nilles while at NASA, with the motive to offset traffic congestion and conserve resources. In the 1980s and 1990s, various federal, state, and private organizations in the US piloted telecommuting programs and started supporting these practices. In the eighties, Olson & Primps (1984) suggested that more than 50% of office work could be conducted from people's homes and two-thirds of jobs could fit teleworking (Baruch, 2000). Several research studies conducted during this time have indicated benefits for organizations by reducing real estate costs (Apgar, 1998) and for the environment by reducing traffic, lowering pollution (Giovanis, 2018), and reducing accident rates. In the next two decades, many practitioners and researchers worldwide studied this topic to understand the antecedents and outcomes for both individuals and organizations (Stanworth, 1998; Suomi & Pekkola, 1998; Thompson S.H, Teo; Vivien KG, Lim; Wai Sook, 1999). Baruch & Nicholson (1997) presented a more realistic *Four Factor* framework that needs to be present for telework to be successful. These include 1) Job factors: nature of work and technology fitment; 2) Organizational factors: support from the company and culture; 3) Home/work interface factors: quality of relationship and facility to work; and 4) Individual factors: Attitude and values towards telework.

Though often used interchangeably, telecommuting and remote work have subtle differences concerning work location, with remote work offering more flexibility to work from anywhere. The *Remote working* phenomenon evolved as technological advancements in hardware, telecommunication, network connectivity, and ICT-based tools provided mechanisms for people to collaborate as effectively as onsite, eliminating the need for any physical presence at the office (Messenger & Gschwind, 2016). This development over the past decades happened in three waves: the first wave led to the availability of freelancers, offering workers and employers new flexibility; the second wave saw the development of mobile technologies and global teamwork that gave workers the flexibility to work anywhere and anytime; and the third wave saw emerging collaborative tools to address worker isolation (Johns & Gratton, 2013). Bailey & Kurland (2002) highlighted the challenges involved in researching telework and found that employee motivation for telework is unclear and there is little evidence to establish that telework leads to better productivity and job satisfaction. Allen et al. (2015) comprehensively reviewed existing research on telecommuting to better

understand its implications for employees' work-family issues, attitudes, and work outcomes, including job satisfaction, organizational commitment and identification, stress, performance, wages, withdrawal behaviours, and firm-level metrics. The paper brought to the surface some of the intricacies associated with telecommuting research and shed insights into the debate regarding telecommuting's benefits and drawbacks.

Of the many studies and experiments conducted during this time, the most prominent ones that established the positive outcomes of telework and remote work include:

- a. Gajendran & Harrison (2007), in their meta-analysis, discuss the several mediators that can influence and impact the telecommuting process. The results have clearly shown favourable effects on perceived autonomy, work-family conflict, job satisfaction, performance, turnover intent, stress, and the quality of supervisor-worker relationships. The findings from these studies indicated positive outcomes and provided directions to address the negative aspects of telecommuting.
- b. Bloom et al. (2015) conducted a work from home (WFH) experiment at a Chinese company with 16,000 employees that demonstrated a 13% performance increase. This was due to employees being able to work more minutes per shift, due to fewer breaks and sick days, being able to work in a quieter and more convenient environment, being able to focus better, and thus performing a higher number of similar tasks in the same amount of time.
- c. Choudhury et al. (2021) studied the effect of work from anywhere (WFA) on productivity by conducting an experiment at the United States Patent and Trademark Office (USPTO). The transition to WFA resulted in a 4.4 percent increase in output without affecting the incidence of rework. The study established that WFA provides both temporal and geographical flexibility.

In contrast, several studies beyond the investigation conducted by Golden & Veiga (2005) recognized potential drawbacks associated with telecommuting, including:

- a. Gainey et al. (1999) studied the effect of telecommuting on corporate culture and individual workers and reported that it leads to social and professional isolation.
- b. Khaifa & Davidson (2000) reported the difficulty in supervising the employees which may negatively affect career development opportunities.
- c. Song & Gao (2020) studied the data from the American Time Use Survey Well-Being Modules and found that teleworkers may have difficulty separating their work and personal lives resulting in stress.

d. Research has shown that telework has health implications: musculoskeletal problems, isolation and depression, stress, and overwork (Sardeshmukh et al., 2012).

The emergence of COVID-19 reshaped the remote work landscape, prompting academicians to research various individual and organizational attitudes, the role of emerging technologies, and the sustainability of remote work. Many studies have indicated an increase in productivity and efficiency during the lockdowns, prompting scholars to take multi-disciplinary approaches to studying the phenomenon (Campo et al., 2021; Chanana & Sangeeta, 2021; Choudhury et al., 2021). Belzunegui-Eraso & Erro-Garcés (2020) extended the Four Factor framework (Baruch & Nicholson, 1997) to include environmental, safety, and legal factors to explain telework and studied the measures taken by companies to ensure employees' safety and provide continuity to economic activity during the COVID crisis. Jose Maria Barrero, Nick Bloom, and Steven Davis founded the Survey of Working Arrangements and Attitudes in May 2020⁷ to study the impact of COVID-19 on working arrangements, and many prominent universities have funded the project. The survey has generated several research outputs that have been used in academic journals, working papers, blogs, and podcasts. In the foreseeable future, remote work will continue to be a subject of interest across geographies for academicians and practitioners.

This dissertation will expand on existing research by focusing on remote work intensity in the context of emerging hybrid work arrangements and examining its:

- a) Direct effects on employee engagement and performance.
- b) Direct effects on LMX, communication frequency, and knowledge sharing
- c) Indirect effects on employee engagement and performance when mediated by LMX, communication frequency, and knowledge sharing.

Remote Work Intensity and Connectivity

For the scope of this study, I define connectivity as the degree of connection between team members and their supervisors. This has two facets: a) the quality of the relationship between team members and supervisors (LMX), and b) their communication frequency. These two attributes play a crucial role in fostering effective collaboration, sharing information, and ensuring clarity in work objectives (Gajendran & Joshi, 2012).

LMX influences outcomes including job satisfaction, organizational commitment, and employee performance (Ariani, 2012). Traditionally, LMX has been studied in the context of face-to-face work arrangements, where frequent in-person interactions provide opportunities

⁷ www.wfhresearch.com. Accessed on 20th August 2023.

for building working relationships, trust, and effective communication. Remote working has altered the nature of the relationship between the team leader and the team members. The team leaders have experienced limitations in their capacity to cultivate positive interpersonal connections with team members who were recruited amidst the ongoing pandemic. Lack of face time has affected the ability of the team leader to provide instant feedback, read the signals, and take timely action to address employee dissatisfaction or prevent attrition. As hybrid work models become more prevalent, it is essential to understand how this shift affects the LMX between team members and their supervisors.

The second aspect of connectivity is the frequency of communication between team members and their managers. Communication frequency refers to the rate and regularity at which team members interact with their managers, sharing information, seeking guidance, and receiving feedback. Regular and timely communication enhances productivity and performance (Patrashkova-Volzdoska et al., 2003) and gives managers a window to unblock team members. In traditional office settings, frequent face-to-face interactions offer ample opportunities for spontaneous conversations, impromptu meetings, and direct access to managers. Pandemic-driven remote working has altered communication patterns, increasing the reliance on virtual communication platforms and reducing physical proximity. While remote work offers advantages, it also presents unique challenges, particularly in maintaining strong connectivity and effective communication between team members and their supervisors.

This study aims to investigate the relationship between remote work intensity and connectivity, specifically assessed through the lens of LMX and communication frequency with their managers. I hypothesize that:

Hypothesis 1(a): Remote work intensity will have a negative effect on connectivity, as assessed by LMX (from the member's perspective).

Hypothesis 1(b): Remote work intensity will have a negative effect on connectivity, as assessed by communication frequency with the manager.

Remote Work Intensity and Learning

The adoption of the agile philosophy has sparked the emergence of open office setups, particularly in the knowledge sector. The SCRUM teams are collocated, resulting in high levels of collaboration, productivity, and learning within the team. In such a scenario, team members would consult each other, seek support for faster resolution of issues, engage in informal discussions on emerging technological trends, and learn from each other's

experiences. Knowledge sharing facilitates the acquisition and application of new knowledge and skills, involves the voluntary exchange of insights and information, enhances collective learning and problem-solving capabilities, and fosters a culture of learning and innovation within the group (Raghuram et al., 2003). This plays a vital role in individual and organizational growth. In traditional office environments, working groups often benefit from frequent face-to-face interactions, spontaneous discussions, and informal knowledge-sharing opportunities. Switching to remote working has resulted in teams working in isolation (Johns & Lynda, 2013), which has negatively impacted their ability to effectively share knowledge. As team members rely more on digital platforms to communicate and collaborate remotely, there may be a decrease in the frequency and depth of knowledge sharing compared to face-to-face interactions. Hence, I hypothesize:

Hypothesis 2: Remote work intensity will have a negative effect on team members learning, as measured by knowledge sharing with group members.

Remote Work Intensity and Employee Engagement

The importance of employee engagement came to the forefront due to the influential contributions of William Kahn in the early 1990s. Kahn's work delineated employee engagement as the capacity of an employee to fully utilize their authentic self within the work environment. He further identified three psychological prerequisites—meaningfulness, safety, and availability—that facilitate this engagement. The concept of employee engagement cuts across the domains of HRM, psychology, and social psychology, generating interest for academicians and practitioners alike over the past two decades (Rafferty et al., 2005). There are multiple definitions of employee engagement, and Truss et al. (2006) defined it as a psychological state and "passion for work" and as a predictor of relationship quality between employer and employee. As research progressed, the job demands-resources model (Demerouti & Bakker, 2011) added depth to the concept by highlighting the interplay between job resources, employee strengths, and engagement. This model underscored that engagement is not solely the outcome of a favourable work environment but also stems from individuals' strengths and capabilities. Many studies looked at employee engagement as an antecedent for improved job performance and lower turnover intentions, resulting in positive consequences and business results (Saks, 2006; Susan, 2012). The belief that employee engagement is related to business outcomes was confirmed by Harter et al. (2002) in a meta-analysis study that examined the relationship between employee satisfaction, engagement, and business outcomes of customer satisfaction, productivity, employee turnover, and

profit. Many studies have looked at employee engagement through various lenses of emotional experiences, well-being (May et al., 2004), and rationality (Towers Perrin, 2003).

The relationship between remote working and employee engagement has drawn the attention of researchers and practitioners worldwide. Several studies have examined the potential effects of remote working on employee engagement, with mixed findings (Davis & Cates, 2013; Pura, 2022; Sardeshmukh et al., 2012). Some researchers argue that telecommuting enhances employee engagement by providing flexibility and reducing work-related stress (Hill et al., 2003). Other studies suggest that telecommuting may hinder engagement due to reduced social interaction, decreased visibility, and increased feelings of isolation (Gajendran & Harrison, 2007; Raghuram & Wiesenfeld, 2004), and there is a curvilinear relationship between the extent of telecommuting and job satisfaction (Golden & Veiga, 2005). To study this relationship further, I posit that:

Hypothesis 3(a): Remote work intensity will be negatively associated with employee engagement.

Remote Work Intensity→Connectivity→Employee Engagement

Research findings have shown a positive association between LMX and employee engagement (Chaurasia & Shukla, 2013; Loi et al., 2009). Employees who experience a positive relationship with their leader tend to exhibit higher levels of engagement, which manifests in their enthusiasm, commitment, and work involvement. These employees are more likely to go above and beyond their job requirements, feel a sense of purpose, and experience greater job satisfaction (Dulebohn et al., 2012; Eisenbeiss et al., 2008). The positive effects of LMX on employee engagement can be attributed to fostering a sense of psychological safety and trust between leaders and employees, creating an environment where individuals feel valued, supported, and encouraged to express their ideas and opinions. This promotes a sense of autonomy, empowerment, and ownership over their work, leading to higher levels of engagement (Dirks & Ferrin, 2002; Eisenbeiss et al., 2008).

Increased communication frequency fosters a sense of connection, shared understanding, and alignment between employees and their colleagues, supervisors, and the organization at large. This, in turn, positively impacts their engagement levels (Macey & Schneider, 2008; Saks, 2006). Frequent communication provides employees with access to necessary information, feedback, and support, enabling them to perform their tasks effectively and make informed decisions (Wong et al., 2010). Regular interactions with colleagues and supervisors create opportunities for social connections, building trust, and

developing relationships that enhance engagement (Eisenbeiss et al., 2008; Mayfield et al., 2021). Studies have demonstrated that LMX, supported by frequent communication, increases a distributed team's ability to collaborate and innovate, even in a distant working environment (Gajendran & Joshi, 2012). Despite these positive effects, I suspect there will be a negative indirect effect of remote work intensity on employee engagement, mediated by LMX and communication frequency. I hypothesize that:

Hypothesis 3(b): Remote work intensity will have a negative indirect effect on employee engagement mediated via connectivity, as assessed by LMX (from the member's perspective).

Hypothesis 3(c): Remote work intensity will have a negative indirect effect on employee engagement mediated via connectivity, as assessed by communication frequency with the manager.

Remote Work Intensity→Learning→Employee Engagement

Research findings have indicated a positive relationship between knowledge sharing and employee engagement (Juan et al., 2016; Zamir & Park, 2017). When employees engage in knowledge-sharing behaviours, they have access to a broader range of information, ideas, and perspectives, allowing them to expand their knowledge base and enhance their skills (Connelly et al., 2012). This access to valuable resources empowers employees, fostering a sense of autonomy, competence, and personal growth, which are key drivers of engagement (Bakker & Demerouti, 2017). Moreover, knowledge sharing plays a crucial role in fostering social connections and collaboration among employees. By sharing their knowledge and experiences, employees create opportunities for learning, feedback, and mutual support, which contribute to a sense of belonging (Tsai & Ghoshal, 1998). Employees who are actively engaged and participate in knowledge-sharing initiatives tend to cultivate robust connections with their peers, fostering a sense of camaraderie and shared objectives. This, in turn, contributes to elevating their levels of engagement (Brock et al., 2005). The positive effects of knowledge sharing on employee engagement can be explained from various theoretical perspectives. Self-determination theory emphasizes the role of knowledge sharing in fulfilling employees' needs for autonomy, competence, and relatedness, promoting their engagement and satisfaction (Deci & Ryan, 2000). In a remote working environment, studies have shown that technology and face-to-face interactions play a vital role in knowledge sharing, which in turn affects employee outcomes (Golden & Raghuram, 2010). Despite these

positive effects, I expect there will be a negative indirect effect of remote work intensity on employee engagement, mediated by learning. Hence, I hypothesize that:

Hypothesis 3(d): Remote work intensity will have a negative indirect effect on employee engagement mediated via learning, measured by knowledge sharing with group members.

Remote Work Intensity and Employee Performance

Employee performance is a critical aspect of organizational success, encompassing the achievement of individual and team goals, the quality of work produced, and the overall contribution to organizational outcomes. The effect of remote work on employee performance is one of the most contested topics, and the existing literature presents a range of contradictory findings. The study by Gajendran & Harrison (2007) indicated a positive effect of telecommuting on job performance, aided by an increase in autonomy and reduced job-family conflict. Remote working can provide employees with a conducive work environment without distractions and interruptions commonly found in traditional office settings, thus allowing for increased focus and productivity (Bailey & Kurland, 2002; Bloom et al., 2015).

However, other studies highlight potential challenges associated with telecommuting that may negatively affect employee performance. Factors such as reduced social interaction, decreased visibility, and difficulties in communication and collaboration may hinder employee performance in telecommuting arrangements (Gainey et al., 1999; Golden & Veiga, 2005; Song & Gao, 2020). The pandemic period has witnessed an adverse impact on individual performance due to the lack of connectivity and knowledge sharing among team members (Jacks, 2021). The lack of face-to-face interactions with the team leaders prevented instant feedback or course corrective actions, raising concerns about performance outcomes (Allen et al., 2015).

Given the mixed findings and the evolving nature of hybrid work arrangements, further investigation is needed to understand the relationship between remote work and employee performance. By exploring this relationship, this study aims to provide valuable insights for organizations and managers seeking to define policies to maximize employee performance in remote work settings. Therefore, I hypothesize that

Hypothesis 4(a): Remote work intensity will be negatively associated with employee performance.

Remote Work Intensity→Connectivity→Employee Performance

Numerous studies have explored the relationship between LMX and various work-related outcomes, including employee performance (Atatsi et al., 2019; Audenaert et al., 2019). Extensive research has established the link between positive leader-member relationships and employee performance. The study by Liden et al. (2006) found that high-quality LMX positively influences employee performance by enhancing their motivation, engagement, and job satisfaction. Similarly, studies have highlighted the positive association between LMX and employee task performance and organizational citizenship behaviours (Wang et al., 2005). Furthermore, a positive leader-member relationship enhances employee engagement and discretionary effort, leading to improved performance outcomes (Podsakoff et al., 2000).

Research has recognized the role of communication frequency in organizational contexts. Frequent communication contributes to increased coordination, knowledge sharing, and collaboration among employees. Studies have established that frequent communication within teams is associated with improved task performance (Pulakos & O’Leary, 2011) and problem-solving capabilities. Though studies have established positive effects, I expect there will be a negative indirect effect of remote work intensity on employee performance, mediated by LMX and communication frequency. Hence, I hypothesize that:

Hypothesis 4(b): Remote work intensity will have a negative indirect effect on employee performance mediated via connectivity, as assessed by LMX (from the member’s perspective).

Hypothesis 4(c): Remote work intensity will have a negative indirect effect on employee performance mediated via connectivity, as assessed by communication frequency with the manager.

Remote Work Intensity→Learning→Employee Performance

Facilitating the exchange of knowledge is a crucial element in propelling both individual and organizational performance while nurturing innovation. In a traditional work environment, informal knowledge sharing positively affects employee performance, highlighting the significance of such interactions and the exchange of tacit knowledge within the workplace. Research has recognized the value of informal knowledge sharing in organizations. Studies have found that informal communication networks significantly contribute to knowledge transfer (Hansen et al., 2005) and demonstrate a positive relationship between informal communication and performance outcomes (Cummings & Cross, 2003).

Various studies have established the relationship between informal knowledge sharing and employee performance, indicating that knowledge sharing facilitates innovation and improves task performance within work teams (Tsai & Ghoshal, 1998). Although research has established a strong positive effect of learning on employee performance, there will be a negative indirect effect when it mediates the relationship between remote work and employee performance. Therefore, I posit that:

Hypothesis 4(d): Remote work intensity will have a negative indirect effect on employee performance mediated via learning, measured by knowledge sharing with group members.

IV. METHOD

Sample and Procedure

The study aims to provide an evidence-based approach to understanding the consequences and success factors associated with implementing the hybrid model. This study is centered on a single organization to control potential confounding factors arising from variations in remote working policies across different organizations. The survey was conducted online using Qualtrics, and participation was voluntary. Informed consent was obtained from all participants before beginning the survey. Participants were informed about the confidentiality of their responses and that there would be no consequences for not completing or participating in the study. The survey included measures about their telecommuting behaviors, communication frequency with managers, knowledge sharing, LMX, engagement, and other demographic information. The employee performance data was obtained from internal HRM systems. The Innominds' executive team was keen to understand the phenomenon of hybrid work models and their effect on employee engagement and performance. The executive team approved my request to conduct the study across the Indian employee base.

The survey was rolled out to full-time employees working across all offices in India, including employees working from customer locations. The participants had four weeks to complete the survey. To ensure the accuracy and reliability of the findings, I excluded the survey data that had an overall completion rate of less than 75% and the survey data submitted by the trainees. I utilized archived performance rating data retrieved from Innominds' performance management system, sourced from the latest appraisal cycle, for the survey participants included in the study.

With the above exclusions, the final sample size considered for the scope of the study is 446. Most of the sample size was male (74%). Thirty-seven percent of the sample were between 21-30 years old, and 49% were between 30-40 years old. Approximately 35% of the sample (155 participants) had master's degrees, and 61.4% (274 participants) had bachelor's degrees. The mean age of the sample is 31.99 years ($SD = 6.4$). Participants reported having an average of 8.2 years ($SD = 5.12$) of work experience, with the mean organization tenure of the sample being 3.1 years ($SD = 3.1$). Participants reported a mean remote work intensity (number of days in a week working remotely) of 2.76 days per week ($SD = 1.54$). The sample comprised engineering and support functions in the organization.

Measures

All the measures used in this study have been validated and employed extensively in prior research. These are described in detail below.

Remote work intensity: Remote work intensity is the extent to which employees work remotely and is measured by asking participants the number of days per week they work from home or remotely (Gajendran et al., 2015; Golden & Veiga, 2005). The mean remote work intensity of the sample is 2.76 days (SD = 1.54).

Employee engagement: I measured employee engagement using the 9-item questionnaire developed by Schaufeli et al. (2019). This is grouped into three subscales covering vigour, dedication, and absorption. Accordingly, the following items were used to capture employee engagement: (a) At my work, I feel bursting with energy. (b) At my job, I feel strong and vigorous. (c) I am enthusiastic about my job. (d) My job inspires me. (e) When I get up in the morning, I feel like going to work. (f) I feel happy when I am working intensely. (g) I am proud of the work that I do. (h) I am immersed in my work. (i) I get carried away when I am working. All items are scored on a seven-point frequency rating scale ranging from 1 (Strongly Disagree) to 7 (Strongly Agree). The reliability analysis indicated a Cronbach's α of 0.849.

Employee performance: I have taken the employee performance data from Innmominds' performance management system. All employees who completed a minimum of two months of service by the effective date of the appraisal process are eligible to receive performance feedback. The entire process is managed using a home-grown performance management system. At the effective appraisal date, the HR team triggers the self-appraisal process for all eligible employees. After the self-appraisal, the managers review the data, have an in-person meeting to share feedback, and rate each employee on the following scale: 1-Significantly below expectations; 2-Moderately below expectations; 3-Consistently meets expectations; 4-Exceeding expectations; and 5-Outstanding contribution.

Relationship quality (LMX): I measured LMX using a modified version of the LMX-7 Scale (Hofmann et al., 2003). Seven items were rated using a 7-point Likert-type scale ranging from "strongly disagree" to "strongly agree". The items are: (a) "I know where I stand with my supervisor", (b) "My manager understands my job problems and needs", (c) "My manager recognizes my potential", (d) "My manager would use his/her power to help me solve work related problems", (e) "My manager would "bail me out" at his/her expense", (f) "I defend and justify my manager decisions when he/she is not present to do so", and (g) "I

have an effective working relationship with my manager”. The reliability analysis indicated a Cronbach’s α of 0.876.

Communication frequency: I measured communication frequency based on the questionnaire from the study by Kacmar et al. (2003). Team members reported how often they communicated with leaders on (a) face-to-face meetings, (b) Informal face-to-face interactions, (c) e-mail, (d) phone communications, (e) Instant messenger (e.g., Slack, Whatsapp), (f) Audio/Video conferences (e.g., MS Teams, zoom), and (g) Text Messages. The participants rated on the frequency for each of the items along: (1) Less than once a month, (2) Once or twice a month, (3) Once or twice a week, (4) Once a day, and (5) More than once a day. The reliability analysis indicated a Cronbach’s α of 0.871.

Knowledge sharing: I measured the employees’ propensity to share knowledge within the group using the questionnaire from the study by Golden & Raghuram (2010). The 5 items of inquiry included: (a) In my work group I discuss work-related problems and solutions (b) I can easily contact those who can help me when I need them (c) In my work group, I share work-related success and failure experiences (d) I can get solutions to problems from people who work from other locations (e) I feel comfortable in seeking help from people in my group. The participants rated using a 7-point Likert-type scale ranging from “strongly disagree” to “strongly agree”. The reliability analysis indicated a Cronbach’s α of 0.861.

Control Variables: Control variables are required in research to increase the internal validity, precision, reduction of bias, and generalizability of the findings by isolating the effects of the variable of interest and controlling for other factors that may influence the outcome.

First, I controlled for gender, as research has shown that women work (or prefer to work) remotely more than men, and it is important to ensure that the effect of remote work intensity on outcomes of engagement and performance is not merely due to gender differences. Further, I controlled for tenure in the organization, as longevity in the organization influences employee performance and engagement and controlling for this variable would strengthen the efforts to understand the effect of remote work intensity on employee engagement and performance. I have also controlled for the team’s colocation status, which was measured with the survey question, “*What percentage of your project team works in the same city that you do? - 1-100%*”.

V. HYPOTHESIS TESTING

Descriptive statistics for variables in the hypothesized models are presented in Table 1. The correlations among these variables are presented in Table 2. The correlation analysis indicated a statistically non-significant negative effect of remote work intensity on employee engagement and employee performance. The analysis also indicated a statistically non-significant negative effect on LMX, a statistically significant negative effect on communication frequency, and a statistically non-significant positive effect on knowledge sharing. I used hierarchical regression to test my hypotheses. In the first step, for each hypothesis, I entered the control variables (organizational tenure, employee gender, and team colocation) to examine their effect on the relevant dependent variable. In the following steps, predictor variables (e.g., remote work intensity) were entered to understand their effects on the relevant dependent variables above and beyond the control variables.

For statistical analysis, I used Jamovi Version 2.3.25.0, a free and open-source software that provides an easy-to-use graphical user interface (GUI) for data analysis and is particularly useful for researchers.

Hypothesis 1(a)

The hypothesis predicted that the remote work intensity would have a negative effect on LMX. Examination of the zero-order correlations from Table 2 revealed a non-significant negative relationship between remote work intensity and LMX ($r = -.002, p > .05$). Table 3 presents the hierarchical regression results of the tests for Hypothesis 1(a). In Model 1, I found statistically significant relationships between two control variables and LMX. Specifically, organizational tenure ($b = .04, p < .01$) and team colocation ($b = .00, p < .001$) had significant positive relationships with LMX. The control variables collectively accounted for 5.7% of the variance in LMX. Next, I introduced remote work intensity as a predictor in Model 2. I found a statistically significant positive relationship between remote work intensity and LMX ($b = .07, p < .05$). The addition of remote work intensity accounted for an additional 1% variance in LMX ($\Delta R^2 = .01$). Although remote work intensity was significantly related to LMX, the observed effect was in the opposite direction of what was hypothesized. Therefore, hypothesis 1(a) was not supported.

Hypothesis 1(b)

The hypothesis predicted that the remote work intensity would have a negative effect on communication frequency with the manager. Examination of the zero-order correlations from Table 2 revealed a strong negative relationship between remote work intensity and

communication frequency ($r = -.26, p < .001$). Table 4 presents the hierarchical regression results of the tests for Hypothesis 1(b). In Model 1, I found statistically significant relationships for all control variables with communication frequency: organizational tenure ($b = .05, p < .01$), gender ($b = -0.31, p < .01$), and team collocation ($b = .01, p < .001$). The control variables collectively accounted for 10.8% of the variance in communication frequency. Next, I introduced remote work intensity as a predictor in Model 2. I found a statistically significant negative relationship between remote work intensity and communication frequency ($b = -.13, p < .001$). The addition of remote work intensity accounted for an additional 3.2% variance in communication frequency ($\Delta R^2 = .032$). Therefore, hypothesis 1(b) was supported.

Hypothesis 2

The hypothesis predicted that the remote work intensity would have a negative effect on team members learning as measured by knowledge sharing with group members. Examination of the zero-order correlations from Table 2 revealed a non-significant positive relationship between remote work intensity and knowledge sharing ($r = .07, p > .05$). Table 5 presents the hierarchical regression results of the tests for Hypothesis 2. In Model 1, I found statistically significant relationships between two control variables and knowledge sharing. Specifically, organizational tenure ($b = .03, p < .05$) and team collocation ($b = .00, p < .05$) had significant positive relationships with knowledge sharing. The control variables collectively accounted for 3.3% of the variance in knowledge sharing. Next, I introduced remote work intensity as a predictor in Model 2. I found a statistically significant positive relationship between remote work intensity and knowledge sharing ($b = .07, p < .05$), the observed effect was in the opposite direction than hypothesized. The addition of remote work intensity accounted for an additional 2% variance in knowledge sharing ($\Delta R^2 = .02$). Therefore, hypothesis 2 was not supported.

Hypothesis 3(a)

The hypothesis predicted that the remote work intensity would have a negative effect on employee engagement. Examination of the zero-order correlations from Table 2 revealed a non-significant negative relationship between remote work intensity and employee engagement ($r = -.02, p > .05$). Table 6 presents the hierarchical regression results of the tests for Hypothesis 3(a). In Model 1, I found statistically significant relationships between team collocation and employee engagement ($b = .00, p < .001$). The control variables collectively accounted for 4.3% of the variance in employee engagement. Next, I introduced remote work

intensity as a predictor in Model 2. I found a statistically non-significant positive relationship between remote work intensity and employee engagement ($b = .03, p > .05$), and the observed effect was in the opposite direction of what was hypothesized. Therefore, hypothesis 3(a) was not supported.

Hypotheses 3(b), 3(c), and 3(d) predict the effect of remote work intensity on employee engagement mediated by LMX, communication frequency, and knowledge sharing, respectively. To conduct the mediation analysis, I used the MedMod module—an OLS regression path analysis modelling tool—in Jamovi (version 2.3). The significance of the indirect effects was tested using bias-corrected Bootstrapping with 1000 samples, wherein a statistically significant effect was determined if the 95% bias-corrected confidence intervals surrounding the effect did not include zero. Furthermore, analyses were conducted using Full-Information Maximum Likelihood estimation (FIML) to account for missing data. Figure 2 shows the conceptual diagram for the hypotheses. The variables in the model collectively accounted for 21% of the variance in engagement ($R^2 = .21, F_{7,370} = 14.0, p < .001$), as depicted in Table 7.

Hypothesis 3(b)

The hypothesis predicted that remote work intensity would have a negative indirect effect on engagement mediated by LMX. Results from the mediation analysis reveal the following: a) Remote work intensity had a significant effect on LMX ($a = .06, 95\% CI [.00, .13]$, Table 8); b) LMX had a significant effect on engagement ($b = .22, p < .001$, Table 7); c) Remote work intensity had a significant indirect effect on engagement via LMX ($ab = .014, 95\% CI [.002, .033]$), as shown in Table 12, however, this effect was opposite of the hypothesized direction; d) The direct effect of remote work intensity on engagement was not significant ($c' = .01, 95\% CI [-.04, .06]$, Table 12). The total effect of remote work intensity on engagement was not significant ($c = .03, 95\% CI [-.02, .08]$, Table 12). Therefore, hypothesis 3(b) is not supported.

Hypothesis 3(c)

The hypothesis predicted that remote work intensity would have a negative indirect effect on engagement, mediated by communication frequency. Results from the mediation analysis reveal the following: a) Remote work intensity had a significant negative effect on communication frequency ($a = -.13, 95\% CI [-.19, -.06]$, Table 8); b) Communication frequency had a non-significant effect on engagement ($b = .02, p > .05$, Table 7); c) Remote work intensity had a non-significant indirect effect on engagement via communication frequency ($ab = -.003, 95\% CI [-.016, .007]$) as shown in Table 12 ; d) The direct effect of

remote work intensity on engagement was not significant ($c' = .01$, 95% CI [-.04, .06], Table 12). The total effect of remote work intensity on engagement was not significant ($c = .03$, 95% CI [-.02, .08], Table 12). Therefore, hypothesis 3(c) is not supported.

Hypothesis 3(d)

The hypothesis predicted that remote work intensity would have a negative indirect effect on engagement mediated by knowledge sharing. Results from the mediation analysis reveal the following: a) Remote work intensity had a significant effect on knowledge sharing ($a = .07$, 95% CI [.01, .13], Table 8); b) Knowledge sharing had a significant effect on engagement ($b = .22$, $p < 0.001$, Table 7); c) Remote work intensity had a significant indirect effect on engagement via knowledge sharing ($ab = .016$, 95% CI [.004, .036]) as shown in Table 12, however, this effect was opposite of the hypothesized direction; d) The direct effect of remote work intensity on engagement was not significant ($c' = .01$, 95% CI [-.04, .06], Table 12). The total effect of remote work intensity on engagement was not significant ($c = .03$, 95% CI [-.02, .08], Table 12). Therefore, hypothesis 3(d) is not supported.

Hypothesis 4(a)

The hypothesis predicted that the remote work intensity would have a negative effect on employee performance. Examination of the zero-order correlations from Table 2 revealed a non-significant negative relationship between remote work intensity and employee performance ($r = -.04$, $p > .05$). Table 9 presents the hierarchical regression results of the tests for Hypothesis 4 (a). In Model 1, I found statistically significant relationships between organization tenure and employee performance ($b = .04$, $p < .001$). The control variables collectively accounted for 7% of the variance in employee performance. Next, I introduced remote work intensity as a predictor in Model 2. I found a statistically non-significant positive relationship between remote work intensity and employee performance ($b = .00$, $p > .05$); the observed effect was in the opposite direction of what was hypothesized. Therefore, hypothesis 4(a) was not supported.

Hypotheses 4(b), 4(c) and 4(d) predict the effect of remote work intensity on employee performance mediated by LMX, communication frequency, and knowledge sharing, respectively. To conduct the mediation analysis, I once again used the MedMod module in Jamovi (version 2.3). Figure 3 shows the conceptual diagram for the hypotheses. The variables in the model collectively accounted for 7.6% of the variance in employee performance ($R^2 = .08$, $F_{7,371} = 4.36$, $p < .001$).

Hypothesis 4(b)

The hypothesis predicted that remote work intensity would have a negative indirect effect on performance mediated by LMX. Results from the mediation analysis reveal the following: a) Remote work intensity had a significant effect on LMX ($a = .06$, 95% CI [.00, .13], Table 11); b) LMX had a non-significant effect on performance ($b = .04$, $p > .05$, Table 10); c) Remote work intensity had a non-significant indirect effect on performance via LMX ($ab = .002$, 95% CI [-.001, .013]) as shown in Table 12, and this effect was opposite of the hypothesized direction; d) The direct effect of remote work intensity on performance was not significant ($c' = .003$, 95% CI [-.041, .050], Table 12). The total effect of remote work intensity on performance was not significant ($c = .000$, 95% CI [-.039, .040], Table 12). Therefore, hypothesis 4(b) is not supported.

Hypothesis 4(c)

The hypothesis predicted that remote work intensity would have a negative indirect effect on performance mediated by communication frequency. Results from the mediation analysis reveal the following: a) Remote work intensity had a significant negative effect on communication frequency ($a = -.13$, 95% CI [-.19, -.06], Table 11); b) Communication frequency had a non-significant effect on performance ($b = .04$, $p > .05$, Table 10); c) Remote work intensity had a non-significant negative indirect effect on performance via communication frequency ($ab = -.005$, 95% CI [-.015, .002]) as shown in Table 12; d) The direct effect of remote work intensity on performance was not significant ($c' = .003$, 95% CI [-.041, .050], Table 12). The total effect of remote work intensity on performance was not significant ($c = .000$, 95% CI [-.039, .040], Table 12). Therefore, hypothesis 4(c) is not supported.

Hypothesis 4(d)

The hypothesis predicted that remote work intensity would have a negative indirect effect on performance mediated by knowledge sharing. Results from the mediation reveal the following: a) Remote work intensity had a significant positive effect on knowledge sharing ($a = .07$, $p < .05$, Table 10); b) Knowledge sharing had a non-significant negative effect on performance ($b = -.00$, $p > .05$, Table 10); c) Remote work intensity had a non-significant indirect negative effect on performance via knowledge sharing ($ab = -.000$, 95% CI [-.008, .006]) as shown in Table 12; d) The direct effect of remote work intensity on performance was not significant ($c' = .003$, 95% CI [-.041, .050], Table 12). The total effect of remote work intensity on performance was not significant ($c = .000$, 95% CI [-.039, .040], Table 12). Therefore, hypothesis 4(d) is not supported.

VI. DISCUSSION

Remote work, or telecommuting, has become increasingly prevalent in recent decades, offering employees the flexibility to work from locations outside of the traditional office setting. The COVID-19 pandemic dramatically accelerated the adoption of remote work globally. Organizations that previously had limited experience with remote work were forced to transition their entire workforce to remote setups to ensure business continuity and employee safety. This period of forced remote work highlighted the viability and effectiveness of remote work arrangements on a large scale. As the pandemic ended, organizations began recognizing the value of a hybrid work model that combines in-person and remote work. The hybrid model allows employees to work remotely for certain days while coming into the office for collaboration, meetings, or specific tasks that benefit from in-person interaction. As organizations continue to embrace hybrid work models, there is a need to understand the impact of remote work on employee well-being, job satisfaction, and performance. To make informed decisions, research has stressed the significance of examining the long-term implications of remote work, including the hybrid model (Barrero et al., 2020). Thus, studying the effects of remote work on employee outcomes is essential for evidence-based decision-making for managers and organizations.

In my dissertation, I tried to offer a framework for looking into both the direct effects of remote work on employee engagement and performance as well as the indirect effects of remote work on employee engagement and performance when LMX, communication frequency, and knowledge sharing are involved. The study's findings are anticipated to assist firms in making informed decisions about their remote work-related policies and practices to improve employee outcomes. I expected a negative direct effect of remote work intensity on employee engagement and performance and a negative indirect effect when mediated by LMX, communication frequency, and knowledge sharing.

Below, I summarize the findings of this dissertation, discuss the contributions, address the limitations of this research, and provide some directions for future research.

Summary of Results

The study encompassed two sets of hypotheses. The first set focused on examining the direct effect of remote work intensity on employee engagement and employee performance. The second set of hypotheses sought to investigate the indirect effects of remote work intensity on employee engagement and performance when LMX, communication frequency, and knowledge sharing are mediating factors. This comprehensive approach

allowed the study to explore both the immediate and underlying mechanisms through which remote work intensity impacts employee engagement and performance. In contrast to the prevailing concerns that remote work might lead to a decline in performance and engagement, my findings suggest a more optimistic and nuanced perspective, highlighting the potential positive outcomes associated with remote work. This aligns with the findings of a recent study on the heels of COVID-19 that presented the positive effects of remote work intensity and enhanced our understanding of remote work arrangements (Gajendran et al., 2021).

Employee Engagement: I anticipated that certain negative effects, such as feelings of isolation (Davis & Cates, 2013), limited social connections, communication and collaboration difficulties, blurred work-life boundaries, and restricted learning opportunities (Song & Gao, 2020), would potentially outweigh the positive aspects, such as flexibility, autonomy, reduced commute stress, and enhanced focus. As organizations adopt hybrid models, I expected remote work intensity to negatively affect employee engagement. Contrary to my expectations, the findings did not support the hypothesis and indicated a positive, non-significant direct effect. This trend echoes the findings that remote work arrangements can foster heightened engagement levels (Allen et al., 2015; Gajendran & Harrison, 2007). The flexibility and autonomy, work-life balance, and reduced stress levels provided by remote work resulted in employee well-being and job satisfaction, resulting in a positive effect on employee engagement (Bosua et al., 2019). An interesting recent study in post-COVID-19 times has shown that gamification has led to better employee engagement (Pura, 2022) within teams, and managers may explore using this method by dividing or pairing teams for certain tasks like identifying the most bugs or conducting quizzes or software development assignments. Additionally, organizations should develop employee engagement programs like team meet-ups, webinars with industry experts, hackathons, team-building activities, and counselling sessions to boost employee morale and motivation levels for improved engagement (Chanana & Sangeeta, 2021).

Employee Performance: On similar lines to the previous hypothesis, I expected a negative effect of the remote work intensity on employee performance. I did not find any negative effect; rather, the analysis indicated a positive, non-significant effect. This weak positive relationship means that there is no reduction in employee performance while working remotely. This is in line with the findings from a recent study by Campo et al. (2021), which concluded that telework did not have a significant effect on job performance in the context of COVID-19. My findings align with the study conducted by Bloom et al. (2015), which found

no conclusive evidence of a significant negative impact of remote work on employee performance. Remote work results in fewer work interruptions, empowers employees to tailor their work schedules to their most productive hours, and enables them to optimize their focus and productivity (Bailey & Kurland, 2002; Bosua et al., 2019), leading to better performance. The removal of commute time (Apgar, 1998) and the ability to work in a comfortable and personalized environment have potentially increased job satisfaction and reduced stress, resulting in enhanced job performance.

Mediating Mechanisms

LMX: Research suggests that LMX mediates the effect of remote work on many job outcomes, including performance (Kuruzovich et al., 2021). To study this effect, I hypothesized that the remote work intensity would have a negative direct effect on LMX and a negative indirect effect on employee engagement and performance when mediated by LMX. In contrast to my expectations, I did not find any negative effects in any of these relationships. The analysis revealed a positive, significant direct effect on LMX, a positive, significant indirect effect on employee engagement, and a positive, non-significant indirect effect on performance when mediated by LMX. The positively significant effect of remote work intensity and LMX could be bi-directional; the job autonomy and freedom associated with remote working may result in better relationships between leaders and members, or high-quality LMX may engender trust, which suppresses the negative effects associated with remote working. This trust leads to better task performance (Gajendran & Joshi, 2012) and employee engagement. These positive effects associated with LMX on employee outcomes are further accentuated by the adoption of telecommuting technologies to meet the increased demand for remote work and virtual collaboration: audio/video conferencing tools like MS Teams, Zoom, and Google Meet; and project management software like Trello and Asana (Kuruzovich et al., 2021).

Communication Frequency: A related construct that I studied in tandem with LMX is communication frequency, and research has shown that effective communication is the best predictor of employee outcomes in remote work arrangements (Mikkelsen et al., 2023). To study this effect, I hypothesized that remote work intensity would have a negative direct effect on communication frequency and a negative indirect effect on employee engagement and performance when mediated by communication frequency. The analysis supported the hypothesis, revealing a negative significant direct effect on communication frequency, a negative non-significant indirect effect on employee engagement, and a negative non-significant indirect effect on performance when mediated by communication frequency. The

survey data revealed that the frequency of face-to-face meetings, both formal and informal, between team members and managers is lower than the frequency of communication based on emails, instant messages, and video conferences. While these methods offer flexibility, they contribute to a decrease in communication frequency. In a traditional office setting, employees and managers have the advantage of proximity, allowing for spontaneous and informal interactions. These interactions occur naturally during breaks, in hallways, or through impromptu conversations, leading to frequent communication. With remote work, the physical distance hinders such spontaneous interactions, resulting in a decrease in communication frequency. With less direct supervision from managers, employees may feel less compelled to engage in frequent communication for routine updates or progress reports.

Knowledge Sharing: I hypothesized that remote work intensity would have a negative direct effect on knowledge sharing within working groups and a negative indirect effect on employee engagement and performance when mediated by knowledge sharing within working groups. The hypothesis is grounded in the understanding that remote work restricts informal learning opportunities, limits access to coaching and mentoring, and diminishes social interaction and collaboration within the team (Hinds & Mortensen, 2005; Raghuram et al., 2003). Contrary to my expectations, I did not find negative effects in any of these relationships. The analysis revealed a positive, significant direct effect on knowledge sharing, a positive, significant indirect effect on employee engagement, and a positive, non-significant indirect effect on performance when mediated by knowledge sharing. Studies have established that the quality of leader-member relationships, trust, and organizational commitment positively influence the employee's propensity to share knowledge (Golden & Raghuram, 2010). In alignment with this study, the positive and significant effect of LMX established in this model could be the underlying cause of similar effects of knowledge sharing on employee engagement and performance. Hence, the negative effect of communication frequency may have been suppressed by the positive effect of LMX, resulting in an indirect positive effect of knowledge sharing on employee engagement and performance. During the pandemic, several emerging learning portals have gained popularity, providing individuals with accessible and diverse learning opportunities. Platforms like Coursera, Udemy, and LinkedIn Learning have experienced increased demand, offering a vast array of online courses across various domains. Self-motivated individuals who manage their time effectively owing to the benefits of remote work's flexibility continue to seek out learning opportunities on these platforms, which may explain the positive mediating effect on employee engagement and performance.

I explored the total effects of all the mediating variables on employee engagement (Figure 2) and employee performance (Figure 3). The findings did not reveal any negative effects of the total effects on employee engagement and employee performance (Table 12).

Research Contributions

This study has several distinctive features. Firstly, it is a comprehensive examination conducted in the post-pandemic era when organizations are actively shaping hybrid work policies, thus offering valuable insights into uncharted territory. Secondly, it is an evidence-based study carried out at Innominds, enhancing the credibility and relevance of the findings. Thirdly, the study sheds light on employee behaviors within a hybrid work environment, enriching our understanding of this evolving work arrangement. Lastly, the study contributes to the advancement of knowledge by deepening our comprehension of the effects of remote work on employee engagement, performance, and well-being. Though I did not find support for most of the hypotheses in my model, except for the hypothesis that predicted a negative effect on communication frequency, the findings of this study make a significant contribution to existing academic literature and to the practitioner's world.

The primary contribution of my study is to the emerging literature on remote and hybrid work and assists in building a theoretical framework that comprehensively examines the direct and indirect impact of remote work on various employee outcomes. My model incorporates mediating variables such as LMX, communication frequency, and knowledge sharing, and considering these interconnected variables provides a holistic understanding of the complex work-related dynamics at play. Secondly, the findings from my study reinforce the theories highlighting the positive impact of remote work on various employee outcomes, though prior research has revealed mixed results. More specifically, the significant and positive effect of remote work on LMX and knowledge sharing. The positive mediating effect of these two variables on employee engagement is statistically significant and strengthens the literature on the positive effects of remote work. Amid the challenging circumstances of the COVID-19 pandemic, employees faced not only the adverse effects of remote work but also emotional stress resulting from lockdown measures and personal losses. Despite these hardships, the benefits derived from increased flexibility, autonomy, reduced commute stress, and heightened focus may have outweighed the negative consequences, such as feelings of isolation, limited social connections, communication and collaboration challenges, blurred work-life boundaries, and limited opportunities for learning and career development. Lastly, this study enhances our understanding of employee resilience and adaptability within the

context of remote work. The findings highlight how employees effectively harnessed the benefits of remote work to sustain performance and well-being despite facing challenging circumstances. By shedding light on these dynamics, the study adds to existing theories on employee engagement and adaptability, providing valuable insights into how individuals can thrive and succeed while working remotely.

The outcomes equip practitioners with valuable guidance to make informed decisions regarding hybrid work policies and strategies that align with the organization's goals. By gaining a deeper understanding of the relationship between remote work and employee outcomes, practitioners can strike a balance that maximizes performance and engagement while maintaining a healthy hybrid work environment. The findings of the study indicate that working three days remotely does not result in any detrimental impact on crucial employee outcomes, such as LMX, knowledge sharing, employee engagement, and performance. This suggests that organizations can adopt a flexible approach by allowing employees to work remotely for up to 3 days, thereby capitalizing on the associated benefits. Given the strength of the positive effect of LMX on employee outcomes, organizations can improve engagement and performance by providing LMX training for team leaders (Gajendran & Joshi, 2012). By prioritizing effective communication strategies, nurturing strong leader-member relationships, and offering avenues for ongoing learning, organizations can leverage remote work to promote amplified employee engagement and sustained performance. The study helps organizations embrace a positive outlook regarding the possibilities presented by remote work and cease undue concern over potential risks related to communication and the quality of the leader-member relationship.

Limitations and Future Research

Several limitations should be taken into account when interpreting the findings of this study.

- a) **Sample Size and Generalizability:** The study was conducted within the specific organizational and geographical context of Innominds, which may restrict the generalizability of the findings to a broader population or diverse industries. Replicating the study across diverse organizations and industries would yield a more comprehensive understanding of the effects of remote work intensity on employee outcomes.
- b) **Self-Report Measures:** It's essential to recognize that hybrid work models are a relatively recent development. In the context of this research, I gathered information through self-reported measures, a method that might carry response bias and potential inaccuracies.

Engagement, Leader-Member Exchange (LMX), communication frequency, and knowledge sharing data were obtained through a survey, while performance data was drawn from the performance management system's archival records. Despite efforts to ensure the accuracy of the survey data, future research could enhance the validity and reliability of the findings by incorporating multiple data sources and employing qualitative measures.

- c) **Cross-Sectional Design:** The study employed a cross-sectional design, collecting data at a single instance, which inadvertently introduced a common method bias for variables encompassing engagement, Leader-Member Exchange (LMX), communication frequency, and knowledge sharing. This design's limitation lies in its inability to establish causal relationships and provide insights into the prolonged dynamics of remote work effects. This bias can be attributed to factors such as response tendencies, cognitive processes, or the influence of social desirability. However, it's noteworthy that performance data was sourced from archival records within the performance management system, allowing for a time-separated approach. For a more comprehensive understanding of remote work's impact over time, future research endeavours could embrace longitudinal designs, capturing the evolving changes in employee outcomes across an extended period of time.
- d) **Potential confounding variables:** The study did not account for potential confounding variables that could influence the relationship between remote work intensity and employee outcomes. Future research could explore additional factors such as individual characteristics, job demands, and organizational support to provide a more comprehensive understanding of remote work dynamics.

Additionally, the future research direction may include:

- a) **Long-Term Effects of Remote Work:** Investigating the long-term implications of remote work on employee outcomes, including engagement, performance, and well-being, would provide a more comprehensive understanding of the sustained impact of remote work.
- b) **Contextual Factors:** Investigating the impact of contextual factors, such as industry type, organizational culture, and job characteristics, on the relationships between remote work intensity and employee outcomes can facilitate the identification of specific conditions when remote work is effective. By considering these contextual factors, we can gain a deeper understanding of the nuanced dynamics at play and uncover the factors that contribute to the success or challenges of remote work in different settings.

- c) **Managerial Strategies:** Exploring managerial strategies and interventions that effectively optimize remote work outcomes, such as implementing effective communication practices, facilitating virtual team-building activities, and utilizing appropriate performance management approaches, can offer practical guidance to organizations seeking to navigate and optimize remote work arrangements. By examining and identifying these strategies, organizations can enhance their remote work practices and create a productive and engaging remote work environment for their employees.
- d) **Technological Support:** Exploring the impact of technological tools and support systems on facilitating the effectiveness of remote work, fostering collaboration, and promoting knowledge sharing can assist organizations in identifying and implementing the most appropriate technologies to enhance remote work outcomes. By investigating the role of these tools and support systems, organizations can optimize their remote work infrastructure and create an environment that maximizes productivity, communication, and information exchange among remote workers.
- e) **Employee Well-being:** Gaining insight into the influence of remote work on employee well-being, encompassing aspects such as work-life balance, job satisfaction, and mental health, would contribute to a comprehensive evaluation of remote work effects. Such understanding can be of great use to practitioners in the development of strategies aimed at supporting employee well-being in hybrid work settings. By considering the broader aspects of well-being, organizations can implement measures to promote a healthy work-life balance, enhance job satisfaction, and prioritize mental health support for remote employees.

Conclusion

To conclude, my study investigated the impact of remote work on various employee outcomes in the post-pandemic era. Contrary to expectations, the findings revealed that remote work does not have a negative effect on important employee outcomes, such as leader-member exchange, learning, employee engagement, and employee performance. While there was a negative effect on communication frequency due to fewer face-to-face meetings, the results indicated a significant positive effect on LMX and knowledge sharing. These results challenge the common belief that remote work inherently leads to negative consequences for employees. Instead, the study suggests that organizations can effectively leverage remote work models as they allow flexibility, autonomy, and reduced commuting-related stress, all while maintaining employee engagement and performance. By embracing

hybrid work as a viable option, organizations can create a harmonious balance between in-person and remote work, harnessing the benefits of both approaches. This finding highlights the potential for organizations to adapt and optimize their work arrangements to meet the changing needs and preferences of employees, ultimately promoting a productive and satisfying work environment.

Overall, this study provides valuable insights for practitioners, highlighting the positive impact of remote work on employee outcomes and helping them make informed decisions on implementing hybrid work policies. By leveraging the benefits of remote work and addressing its challenges, organizations can create a conducive environment that promotes employee engagement, learning, and performance in the evolving landscape of work.

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VIII. APPENDIX

Measures used in this study.

A. Remote work intensity

1. Currently, **how many days per week** do you work from home, remotely?

B. Leader Member Exchange (LMX)

The next set of statements refer to **your relationship with your manager**. Please select the option that best describes your agreement with each statement.

- 1 = Strongly disagree
- 2 = Disagree
- 3 = Somewhat disagree
- 4 = Neither agree nor disagree
- 5 = Somewhat agree
- 6 = Agree
- 7 = Strongly agree

1. I know where I stand with my manager.
2. My manager understands my job problems and needs.
3. My manager recognizes my potential.
4. My manager would use his/her power to help me solve work related problems.
5. My manager would “bail me out” at his/her expense.
6. I defend and justify my manager’s decisions when he/she is not present to do so.
7. I have an effective working relationship with my manager.

C. Communication Frequency

The following items refer to **how often you communicate with your manager** using different communication channel. Describe the current frequency of your work-related communication with your manager.

- 1 = Less than once a month
- 2 = Once or twice a month
- 3 = Once or twice a week
- 4 = Once a day
- 5 = More than once a day

How often do you communicate via:

1. Face-to-face meetings
2. Informal face-to-face interactions
3. Email
4. Telephone
5. Instant Messenger (Whatsapp, Slack)
6. Video conference (Zoom, Skype, Teams, etc)
7. Text Messages

D. Knowledge Sharing

Still thinking about **your workgroup**, use the rating scale provided below to indicate your agreement or disagreement with each of the following statements.

- 1 = Strongly disagree
- 2 = Disagree
- 3 = Somewhat disagree
- 4 = Neither agree nor disagree
- 5 = Somewhat agree
- 6 = Agree
- 7 = Strongly agree

1. In my work group I discuss work-related problems and solutions.
2. I can easily contact those who can help me when I need them.
3. In my work group, I share work-related success and failure experiences.
4. I can get solutions to problems from people who work from other locations.
5. I feel comfortable in seeking help from people in my group.

E. Employee Engagement

As you think **about your job**, please answer the following statements by selecting the option that best reflects your level of agreement using the scale below:

- 1 = Strongly Disagree
- 2 = Disagree
- 3 = Somewhat disagree
- 4 = Neither agree nor disagree

5 = Somewhat agree

6 = Agree

7 = Strongly agree

1. At my work, I feel bursting with energy.
2. I am enthusiastic about my job.
3. I am immersed in my work.
4. At my job, I feel strong and vigorous.
5. My job inspires me.
6. When I get up in the morning, I feel like going to work.
7. I feel happy when I am working intensely.
8. I am proud of the work that I do.
9. I get carried away when I am working.

Table 1: Descriptive Statistics

	N	Missing	Mean	SD
Age	430	16	31.99	6.419
Gender	440	6	1.26	0.437
Organizational Tenure	430	16	3.31	3.135
Remote Work Intensity	436	10	2.76	1.544
LMX	445	1	5.43	0.933
Communication Frequency	446	0	2.99	1.010
Knowledge Sharing	440	6	5.68	0.860
Employee Engagement	445	1	5.55	0.783
Employee Performance	446	0	3.38	0.593
Team Co-location	409	37	56.16	34.763

Note: $N = 446$

Table 2: Correlation Matrix of study variables

	1.	2.	3.	4.	5.	6.	7.	8.	9.
1. Remote Work Intensity	—								
2. LMX	-.002	(.88)							
3. Communication Frequency	-.26***	.24***	(.87)						
4. Knowledge Sharing	.07	.40***	.14**	(.86)					
5. Employee Engagement	-.02	.39***	.11*	.38***	(.85)				
6. Employee Performance	-.04	.11*	.14**	.04	.01	—			
7. Organizational Tenure	-.09	.17***	.18***	.12*	.04	.23***	—		
8. Team Co-location	-.33***	.17***	.23***	.11*	.19***	.07	.07	—	
9. Gender	.10*	-.05	-.11*	.02	.05	-.15**	-.07	.06	—

Note: $N = 446$. Table presents pairwise correlations. Reliabilities are presented along the diagonal in parentheses.

* $p < .05$, ** $p < .01$, *** $p < .001$

Gender (Male = 1 and Female = 2)

Table 3: Linear Regression Results for Hypothesis 1(a)

Variable	LMX			
	Model 1		Model 2	
	<i>b</i>	SE	<i>b</i>	SE
Constant	5.20***	.17	4.99***	.2
Controls				
Organizational Tenure	.04**	.01	.04**	.01
Gender	-.12	.11	-.14	.11
Team Co-location	.00***	.00	.01***	.00
Main Effects				
Remote Work Intensity			.07*	.03
F	7.77***		6.87***	
<i>df</i>	3,379		4,378	
R ²	.06		.07	
ΔR^2			.01* ^a	

Note: Regression coefficients are unstandardized.

* $p < .05$, ** $p < .01$, *** $p < .001$

^a ΔR^2 shows increase in R^2 from Model 1

Gender (Male = 1 and Female = 2)

Table 4: Linear Regression Results for Hypothesis 1(b)

Variable	Communication Frequency			
	Model 1		Model 2	
	<i>b</i>	SE	<i>b</i>	SE
Constant	2.84***	.18	3.25***	.21
Controls				
Organizational Tenure	.05**	.02	.04**	.02
Gender	-.31**	.12	-.27*	.11
Team Co-location	.01***	.00	.01***	.00
Main Effects				
Remote Work Intensity			-.13***	.03
F	15.4***		15.5***	
<i>df</i>	3,380		4,379	
R ²	.11		.14	
ΔR^2			.03* ^a	

Note: Regression coefficients are unstandardized.

* $p < .05$, ** $p < .01$, *** $p < .001$

^a ΔR^2 shows increase in R^2 from Model 1

Gender (Male = 1 and Female = 2)

Table 5: Linear Regression Results for Hypothesis 2

Variable	Knowledge Sharing			
	Model 1		Model 2	
	<i>b</i>	SE	<i>b</i>	SE
Constant	5.37***	.15	5.14***	.18
Controls				
Organizational Tenure	.03*	.01	.03*	.01
Gender	.06	.10	.03	.10
Team Co-location	.00*	.00	.00**	.00
Main Effects				
Remote Work Intensity			.07*	.03
F	4.29**		4.74***	
<i>df</i>	3,376		4,375	
R ²	.03		.05	
ΔR^2			.02* ^a	

Note: Regression coefficients are unstandardized.

* $p < .05$, ** $p < .01$, *** $p < .001$

^a ΔR^2 shows increase in R^2 from Model 1

Gender (Male = 1 and Female = 2)

Table 6: Linear Regression Results for Hypothesis 3(a)

Variable	Employee Engagement			
	Model 1		Model 2	
	<i>b</i>	SE	<i>b</i>	SE
Constant	5.19***	.14	5.08***	.17
Controls				
Organizational Tenure	.01	.01	.01	.01
Gender	.09	.09	.08	.09
Team Co-location	.00***	.00	.00***	.00
Main Effects				
Remote Work Intensity			.03	.03
F	5.77***		4.71**	
<i>df</i>	3,379		4,378	
R ²	.04		.04	
ΔR^2			.00 ^a	

Note: Regression coefficients are unstandardized.

* $p < .05$, ** $p < .01$, *** $p < .001$

^a ΔR^2 shows increase in R^2 from Model 1

Gender (Male = 1 and Female = 2)

Table 7: Linear Regression Results for Hypothesis 3(b), Hypothesis 3(c) & Hypothesis 3(d)

Variable	Employee Engagement					
	Model 1		Model 2		Model 3	
	<i>b</i>	SE	<i>b</i>	SE	<i>b</i>	SE
Constant	5.19***	.14	5.08***	.17	.03	.03
Controls						
Organizational Tenure	.01	.01	.01	.01	-.01	.01
Gender	.09	.09	.08	.09	.10	.09
Team Co-location	.00***	.00	.00***	.00	.00*	.00
Main Effects						
Remote Work Intensity			.03	.03	.01	.03
Mediation						
LMX					.22***	.04
Communication Frequency					.02	.04
Knowledge Sharing					.22***	.05
F	5.77***		4.71**		14.0***	
<i>df</i>	3,379		4,378		7,370	
R ²	.04		.04		.21	
ΔR^2			.00 ^a		.17 ^b	

Note: Regression coefficients are unstandardized.

* $p < .05$, ** $p < .01$, *** $p < .001$

^a ΔR^2 shows increase in R^2 from Model 1

^b ΔR^2 shows increase in R^2 from Model 2

Gender (Male = 1 and Female = 2)

Table 8: Mediators Model for Hypothesis 3(b), Hypothesis 3(c) & Hypothesis 3(d)

Variable	Employee Engagement											
	LMX				Communication Frequency				Knowledge Sharing			
	<i>b</i>	SE	95% CI		<i>b</i>	SE	95% CI		<i>b</i>	SE	95% CI	
			LL	UL			LL	UL			LL	UL
Controls												
Organizational Tenure	.04**	.01	.02	.07	.04**	.01	.01	.07	.03**	.01	.01	.06
Gender	-.14	.11	-.35	.07	-.27*	.11	-.49	-.04	.03	.09	-.16	.22
Team Co-location	.01***	.00	.00	.01	.01***	.00	.00	.01	.00**	.00	.00	.01
Main Effects												
Remote Work Intensity	.06*	.03	.00	.13	-.13***	.03	-.19	-.06	.07**	.03	.01	.13
F	6.87***				15.5***				4.74***			
<i>df</i>	4,378				4,379				4,375			
R ²	.07				.14				.05			
ΔR^2												

Note: Regression coefficients are unstandardized.

* $p < .05$, ** $p < .01$, *** $p < .001$

^a ΔR^2 shows increase in R^2 from Model 1

Gender (Male = 1 and Female = 2)

Table 9: Linear Regression Results for Hypothesis 4(a)

Variable	Employee Performance			
	Model 1		Model 2	
	<i>b</i>	SE	<i>b</i>	SE
Constant	3.38***	.10	3.38***	.12
Controls				
Organizational Tenure	.04***	.01	.04***	.01
Gender	-.16*	.07	-.16*	.07
Team Co-location	.00	.00	.00	.00
Main Effects				
Remote Work Intensity			.00	.02
F	8.9***		6.66***	
<i>df</i>	3,380		4,379	
R ²	.07		.07	
ΔR^2			.00 ^a	

Note: Regression coefficients are unstandardized.

* $p < .05$, ** $p < .01$, *** $p < .001$

^a ΔR^2 shows increase in R^2 from Model 1

Gender (Male = 1 and Female = 2)

Table 10: Linear Regression Results for Hypothesis 4(b), Hypothesis 4(c) & Hypothesis 4(d)

Variable	Employee Performance					
	Model 1		Model 2		Model 3	
	<i>b</i>	SE	<i>b</i>	SE	<i>b</i>	SE
Constant	3.38***	.10	3.38***	.12	.00	.02
Controls						
Organizational Tenure	.04***	.01	.04***	.01	.04***	.01
Gender	-.16*	.07	-.16*	.07	-.13	.07
Team Co-location	.00	.00	.00	.00	.00	.00
Main Effects						
Remote Work Intensity			.00	.02	.01	.02
Mediation						
LMX					.04	.03
Communication Frequency					.04	.03
Knowledge Sharing					-.00	.04
F	8.9***		6.66***		4.36***	
<i>df</i>	3,380		4,379		7,371	
R ²	.07		.07		.08	
ΔR^2			.00 ^a		.01 ^b	

Note: Regression coefficients are unstandardized.

* $p < .05$, ** $p < .01$, *** $p < .001$

^a ΔR^2 shows increase in R^2 from Model 1

^b ΔR^2 shows increase in R^2 from Model 2

Gender (Male = 1 and Female = 2)

Table 11: Mediators Model for Hypothesis 4(b), Hypothesis 4(c) & Hypothesis 4(d)

Variable	Employee Performance											
	LMX				Communication Frequency				Knowledge Sharing			
	<i>b</i>	SE	95% CI		<i>b</i>	SE	95% CI		<i>b</i>	SE	95% CI	
			LL	UL			LL	UL			LL	UL
Controls												
Organizational Tenure	.04**	.01	.02	.07	.04**	.02	.01	.07	.03*	.01	.01	.06
Gender	-.14	.11	-.35	.07	-.27*	.11	-.49	-.04	.03	.10	-.16	.22
Team Co-location	.01***	.00	.00	.00	.01***	.00	.00	.00	.00**	.00	.00	.00
Main Effects												
Remote Work Intensity	.06*	.03	.00	.13	-.13***	.03	-.19	-.06	.07*	.03	.01	.13
F	6.87***				15.5***				4.74***			
<i>df</i>	4,378				4,379				4,375			
R ²	.07				.14				.05			
ΔR^2												

Note: Regression coefficients are unstandardized.

* $p < .05$, ** $p < .01$, *** $p < .001$

^a ΔR^2 shows increase in R^2 from Model 1

Gender (Male = 1 and Female = 2)

Table 12: Summary Results of Mediation Analysis

Relationship Tested	Index of Mediation	95% Confidence Interval	
		Lower Limit	Upper Limit
Indirect Effect			
Remote work intensity→LMX→ Employee Engagement	.014	.002	.033
Remote work intensity→Communication Frequency→ Employee Engagement	-.003	-.016	.007
Remote work intensity→Knowledge Sharing→ Employee Engagement	.016	.004	.036
Remote work intensity→LMX→ Employee Performance	.002	-.001	.013
Remote work intensity→Communication Frequency→ Employee Performance	-.005	-.015	.002
Remote work intensity→Knowledge Sharing→ Employee Performance	-.000	-.008	.006
Direct Effect			
Remote work intensity→ Employee Engagement	.007	-.044	.059
Remote work intensity→ Employee Performance	.003	-.041	.050
Total Effect			
Remote work intensity→ Employee Engagement	.033	-.020	.088
Remote work intensity→ Employee Performance	.000	-.039	.040

Note: Confidence intervals computed with method: Bias corrected bootstrap

Table 13: Summary of Hypotheses Tested

Hypotheses	Findings
Hypothesis 1(a): Remote work intensity will have a negative effect on connectivity, as assessed by LMX (from the member's perspective).	Not supported
Hypothesis 1(b): Remote work intensity will have a negative effect on connectivity, as assessed by communication frequency with the manager.	Supported
Hypothesis 2: Remote work intensity will have a negative effect on team members learning, as measured by knowledge sharing with group members.	Not supported
Hypothesis 3(a): Remote work intensity will be negatively associated with employee engagement.	Not supported
Hypothesis 3(b): Remote work intensity will have a negative indirect effect on employee engagement mediated via connectivity, as assessed by LMX (from the member's perspective).	Not supported
Hypothesis 3(c): Remote work intensity will have a negative indirect effect on employee engagement mediated via connectivity, as assessed by communication frequency with the manager.	Not supported
Hypothesis 3(d): Remote work intensity will have a negative indirect effect on employee engagement mediated via learning, measured by knowledge sharing with group members.	Not supported
Hypothesis 4(a): Remote work intensity will be negatively associated with employee performance.	Not supported
Hypothesis 4(b): Remote work intensity will have a negative indirect effect on employee performance mediated via connectivity, as assessed by LMX (from the member's perspective).	Not supported
Hypothesis 4(c): Remote work intensity will have a negative indirect effect on employee performance mediated via connectivity, as assessed by communication frequency with the manager.	Not supported
Hypothesis 4(d): Remote work intensity will have a negative indirect effect on employee performance mediated via learning, measured by knowledge sharing with group members.	Not supported

Figure 1: Conceptual Model

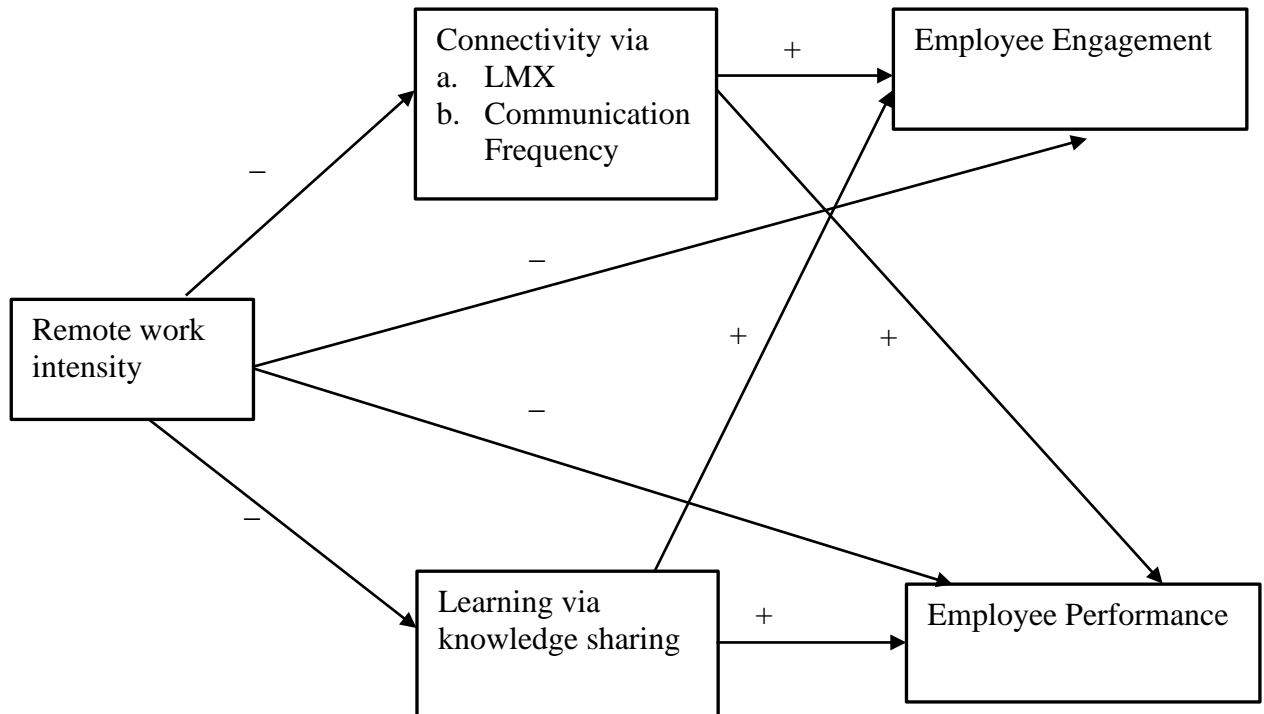


Figure 2: Conceptual Diagram for hypothesis 3(b), hypothesis 3(c) & hypothesis 3(d)

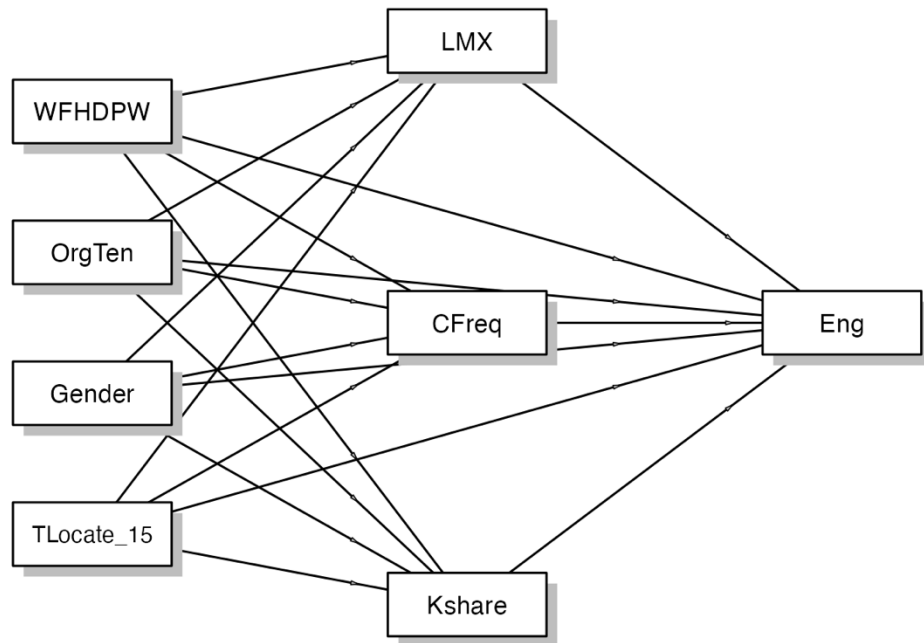


Diagram notes

Covariances among IV are estimated but not shown

Variables description:

WFHDPW – Remote Work Intensity

OrgTen - Organizational Tenure

TLocate_15 - Team Co-location

CFreq – Communication Frequency

Kshare - Knowledge Sharing

Eng – Employee Engagement

Figure 3: Conceptual Diagram for hypothesis 4(b), hypothesis 4(c) & hypothesis 4(d)

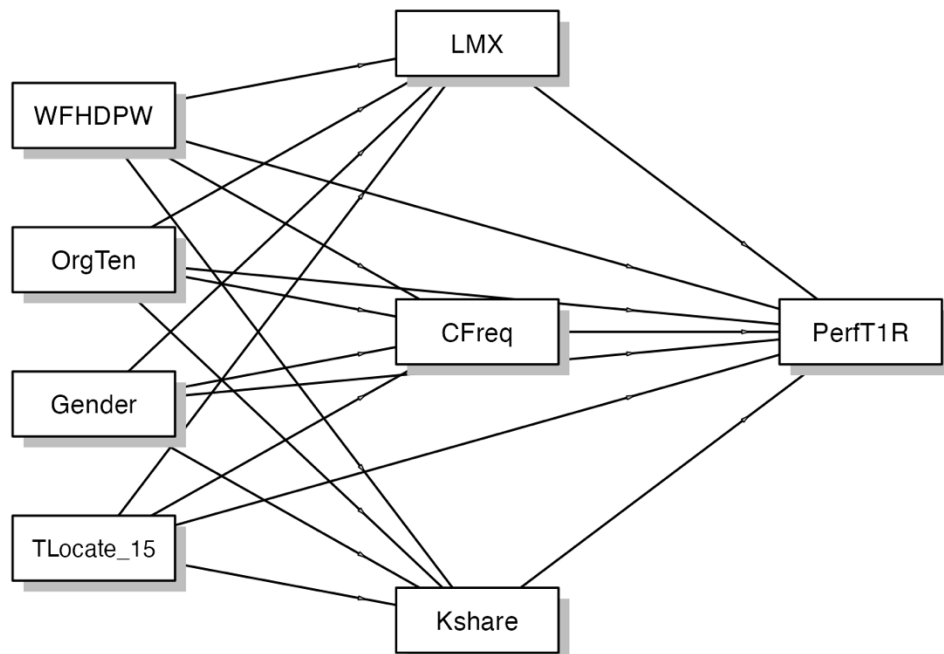


Diagram notes

Covariances among IV are estimated but not shown

Variables description:

WFHDPW – Remote Work Intensity

OrgTen - Organizational Tenure

TLocate_15 - Team Co-location

CFreq – Communication Frequency

Kshare - Knowledge Sharing

PerfT1R – Employee Performance