

Remote leadership in public sector: a systematic review and future research directions

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Abstract

The purpose of this article is to comprehensively review the existing research on remote leadership, especially in the public sector. This study highlights the main problems with previous research findings on remote leadership based on theoretical approaches, methods, antecedents and consequences on the effectiveness of public sector organizations. This study adopted a systematic literature review (SLR) approach based on Tranfield et al. (2003) and PRISMA guidelines by analysing 12 high-quality articles indexed in Scopus from 2016 to 2025. The findings focus on antecedents, mediators, moderators, and consequences of remote leadership, resulting in an integrative conceptual framework. The study reveals that remote leadership effectiveness is strongly influenced by digital competence, trust-building, and transformational leadership behaviours. Furthermore, this study identifies critical research gaps, particularly the limited focus on public sector organisations and non-Western contexts. In addition, the findings that remote leadership is a new leadership approach that uses few theoretical sources in defining the concept of remote leadership. The study contributes by offering a structured multi-level framework and proposing future research directions. Practical implications emphasize the need for digital leadership capability development and organizational readiness in virtual environments.

Keywords:

economic growth; future research directions; quality of work, remote leadership; systematic review

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Introduction

In the era of increasingly rapid digital transformation, remote work has become one of the most crucial organizational issues for various sectors including the public sector. The popularity of collaboration in the form of virtual teams has increased significantly, driven by the need for organizations to remain resilient, efficient, and adaptive amidst global disruption. This development not only marks a change in the way of working, but also fundamentally impacts the structure of services, communication patterns, and forms of collaboration in modern organizations (Kayworth & Leidner, 2001). Today's organizations can no longer be viewed as stand-alone entities. Instead, they are starting to form a broad and flexible network through the integration of virtual teamwork, which is now seen as a strategic element in building sustainable organizational growth and success. The need for the existence of virtual teams marks a paradigm shift in organizations, from autonomous entities that operate separately to work ecosystems that are interconnected in collaborative networks across functions and regions. This virtual collaboration plays an important role in accelerating the achievement of the organization's strategic goals (Jarvenpaa & Tanriverdi, 2003).

In this context, the role of remote leadership has created a new paradigm in organizational work methods offering spatial flexibility, time efficiency, and access to global talent (Townsend et al., 1998). Historically, the concept of virtual teams evolved from the term telecommuting, which was first proposed by Nilles (1976). In his initial view, Nilles introduced the idea of moving work to individuals, rather than moving individuals to physical work locations. However, this evolution later gave birth to the remote worker model, namely individuals who work partially or completely outside the organization's main office with the support of information and communication technology (Hosseini, 2012). Along with technological advances and the increasing need for global project coordination, virtual groups consisting of several remote workers managed by a single manager emerged. This group then evolved into a virtual team, which is not only coordinated by one leader, but also interacts with each other to achieve collective goals (Mogale, 2009).

Although remote leadership is increasingly receiving attention in modern organizational studies, some previous literature shows a conceptual debate regarding the influence of leadership on the effectiveness of virtual teams. Friedrich's (2017) research explains that in the context of virtual teams, the role of leadership does not significantly affect team performance. This view reflects the assumption that in a highly autonomous digital work environment supported by technology systems, team members can manage their tasks and responsibilities independently without high dependence on the role of the leader. However, this finding is inconsistent with a number of other studies that actually emphasize the importance of effective remote leadership in driving team performance, such as research conducted by Sedrine et al. (2021), Newman et al. (2020), and Robert & You (2017) showing that an adaptive and contextual leadership style in a virtual

environment can significantly increase collaboration, productivity, and team motivation. In these studies, leaders who are able to navigate technological challenges, build digital trust, and manage conflict synchronously have been shown to create an inclusive and results-oriented work environment.

On the other hand, remote leadership needs to be studied in the context of the public sector because there are several previous studies that show that the hierarchical leadership model can actually offer higher effectiveness than other leadership styles. This is due to the increasing complexity of coordination, time zone differences, and diverse backgrounds of team members that require a clear structure and a clear chain of command. Eisenberg et al. (2016) suggest that a hierarchical structure provides clarity of roles, accountability, and a more efficient decision-making process in a complex and dynamic virtual team environment. However, despite the growing literature on the types of leadership that are considered effective in a virtual environment, there is still a significant gap regarding how remote leadership should be systematically and strategically prepared to face the demands of digital work. Several studies have highlighted the lack of attention to the development of remote leadership in an organizational context (Alward & Phelps, 2019; Darics, 2020; Friedrich, 2017; Gamero et al., 2021; Purvanova et al., 2021).

This gap becomes increasingly crucial to explore further, considering the trend of remote work and virtual teams will continue to increase in various sectors, especially the public. Without a leadership development strategy that is adaptive to virtual reality, organizations are at risk of experiencing decreased team effectiveness, coordination crises, and reduced employee engagement. Therefore, given this complexity, the need for a more systematic and thematic understanding of remote leadership becomes important. In addition, existing literature on digital leadership, hybrid leadership, and virtual team management has grown significantly in recent years. However, these studies remain fragmented and often lack an integrative perspective that connects leadership mechanisms across individual, team, and organizational levels. This study addresses this limitation by synthesizing insights from these adjacent domains into a unified remote leadership framework, particularly within the public sector context.

Literature review

Definition of remote leadership

This remote leadership variable is still rarely studied because it is a concept that has only recently emerged, especially in 2019-2020 during the COVID-19 pandemic and the last few years, so the definitions are diverse but reflect the same thinking. The remote work environment presents substantially different challenges compared to teams working in physical proximity. Several previous studies have emphasized that remote leadership requires complex competencies, such as digital communication skills (Maduka et al., 2018), the ability to build a virtual presence

and social connectivity (Hafermalz & Riemer, 2020), and sensitivity to technical and psychological challenges due to minimal direct contact (Schmitt, 2024). In addition, remote leaders need to be able to manage team dynamics in uncertain situations, such as during the COVID-19 crisis, which requires rapid changes in work methods and leadership patterns (Liebermann et al., 2021; Krehl & Büttgen, 2022).

In the context of the public sector, remote leadership is also required to be more flexible, collaborative, and able to bridge cultural differences and institutional boundaries (Chew & Zainal, 2022; Guzar & Bianchi-Laubsch, 2024). This indicates that remote leadership is a multidimensional leadership approach that is not only oriented towards results, but also towards team empowerment and the creation of healthy social structures in virtual workspaces. Appendix 1 shows the results of the synthesis and grouping of several definitions of remote leadership or virtual leadership from 12 articles that were reviewed in depth.

Based on several definitions of remote leadership or virtual leadership from previous research, it can be understood as follows: "remote leadership can be understood as a contemporary leadership practice that is technology-based, relationally oriented, and adaptive to space-time challenges, and demands the ability to maintain team effectiveness in an increasingly digital and globally distributed work context."

Research method

The research method used in this literature review uses the guidelines from Tranfield et al. (2003) which focuses on systematic reviews in the field of management research by going through several specific steps that can improve the quality of the study by building a systematic, transparent and reproducible literature review. Systematic writing helps recognize academic contributions to research (Becheikh et al., 2006). The systematic review process involves three main stages: planning, implementing, and documenting the review (Tranfield et al., 2003). Each of these stages consists of several steps, but these steps can be adjusted to the specific needs of the study so that they can be in accordance with the established research protocol. This method has been applied and evaluated by other studies such as those conducted by (Khan et al., 2020). This study aims to systematically synthesize and integrate existing research on the role of leaders who implement remote systems in carrying out work in the current digital and flexible era so that it is interesting to conduct a review through two research questions:

- RQ1.* What does the overall literature suggest about the concept and current research on remote leadership?
- RQ2.* What are some possible future research avenues to develop and expand the existing literature in the context of remote leadership?

Search strategy

Articles on remote leadership that have been reviewed by several researchers can be found by searching databases such as Scopus. The Scopus database was chosen because it is mostly comprehensive, and its search function allows for adequate accuracy (Pascucci et al., 2018; Vergiansyah et al., 2024).

Table 1
Review protocol

Author	Definition of Remote or Virtual Leadership
Research Question	<ol style="list-style-type: none"> 1. What does the literature as a whole suggest about the current concept and research of remote leadership? 2. What are some possible future research opportunities to develop and expand the existing literature in the context of remote leadership?
Database and String	<p>Scopus Database, keywords:</p> <ol style="list-style-type: none"> 1. TITLE-ABS-KEY ("remote leadership") AND PUBYEAR > 2016 AND PUBYEAR < 2025 AND (EXCLUDE (DOCTYPE , "ch") OR EXCLUDE (DOCTYPE , "cp") OR EXCLUDE (DOCTYPE , "no") OR EXCLUDE (DOCTYPE , "er") OR EXCLUDE (DOCTYPE , "cr")) 2. TITLE-ABS-KEY ("virtual leadership") AND PUBYEAR > 2016 AND PUBYEAR < 2025 AND (EXCLUDE (DOCTYPE , "ch") OR EXCLUDE (DOCTYPE , "cp") OR EXCLUDE (DOCTYPE , "no") OR EXCLUDE (DOCTYPE , "er") OR EXCLUDE (DOCTYPE , "cr"))
Inclusion Criteria	<ol style="list-style-type: none"> 1. English article 2. Document type: Article and Article review (final) 3. Empirical, conceptual and theoretical academic journals that focus on remote leadership 4. Context: Business, Management and Accounting in terms of organization type or sample 5. Scopus indexed journal 6. Open access journal.
Exclusion Criteria	<ol style="list-style-type: none"> 1. Publications that are not in English 2. Document Type: Book chapter, conference paper, note, book, and editorial 3. Non-academic journals 4. Context: Business, tourism, health, government organizations 5. Journal is not Scopus indexed 6. Limited access journal.

Source: Authors' work (2026)

Scopus is a comprehensive electronic database with more than 18,000 articles from more than 5,000 international publishers, covering 16,500 journals that have been reviewed by researchers in various multidisciplinary fields with a level of depth and search capacity that provides high accuracy and produces a good literature review (Phillips et al., 2015; Supriharyanti & Sukoco, 2023). The first search used the general keyword "remote leadership" in the Scopus database, followed by the keyword "virtual leadership" as a preference for other alternative keywords. The search in the article database was limited from 2016 - 2025. The search results for both keywords displayed 166 articles, of which 36 articles were

obtained using the keyword "remote leadership" and 130 articles were obtained using the keyword "virtual leadership". The table 1 shows the literature review research protocol along with inclusion and exclusion criteria based on the guidelines from [Tranfield et al. \(2003\)](#).

Selecting and assessing the quality of primary studies

Based on the guidelines of [Tranfield et al. \(2003\)](#) all selected articles need to meet several criteria, where articles that are the source of the literature review must be in English, articles that include remote leadership, open access and have an international reputation with the Scopus index in order to get good quality articles. Then the articles that are focused on the literature review are articles that examine in the context of Business, Management and Accounting. Based on the inclusion standards set, there were 118 articles that did not pass because they did not meet the criteria. So, in the end, 45 irrelevant articles were not selected from the 166 existing articles. Appendix 2 illustrates the study selection process, detailing the stages of identification, screening, eligibility assessment, and final inclusion of articles. The diagram provides a transparent overview of how the studies were systematically filtered based on predefined criteria. The final selection of 12 articles reflects the strict inclusion and quality criteria applied in this study, particularly focusing on high-quality, Scopus-indexed publications. While the number may appear limited, it ensures depth of analysis and conceptual rigor rather than breadth.

Quality assessment

The purpose of the quality assessment is to evaluate the validity of the selected studies, provide proper justification and provide the information needed by readers to identify whether the review strategy can be applied to their research ([Christofi et al., 2017](#)). In line with previous research, the selection of quality journals can refer to Scopus-indexed journals, especially with the highest quartile because the scope of relevant publications is broad and of high quality. ([Supriharyanti & Sukoco, 2023](#)). Of the 45 available articles, 33 articles did not meet the quality assessment so that finally 12 articles were selected for the literature review.

Data extraction

This stage is carried out by careful quality assessment by minimizing data errors and bias ([Tranfield et al., 2003](#)). Furthermore, it is extracted from the 12 selected articles by writing it in a Google spreadsheet that records information related to the content of the article starting from the journal, author, study title, year of study, study objectives, research design and data, theories used, summary of results, and definitions and antecedents of remote leadership consequences. The PRISMA diagram guide was used in carrying out the search strategy, article selection criteria, and reporting the systematic review process, the details of which are explained in Appendix 2 ([Moher et al., 2009](#)).

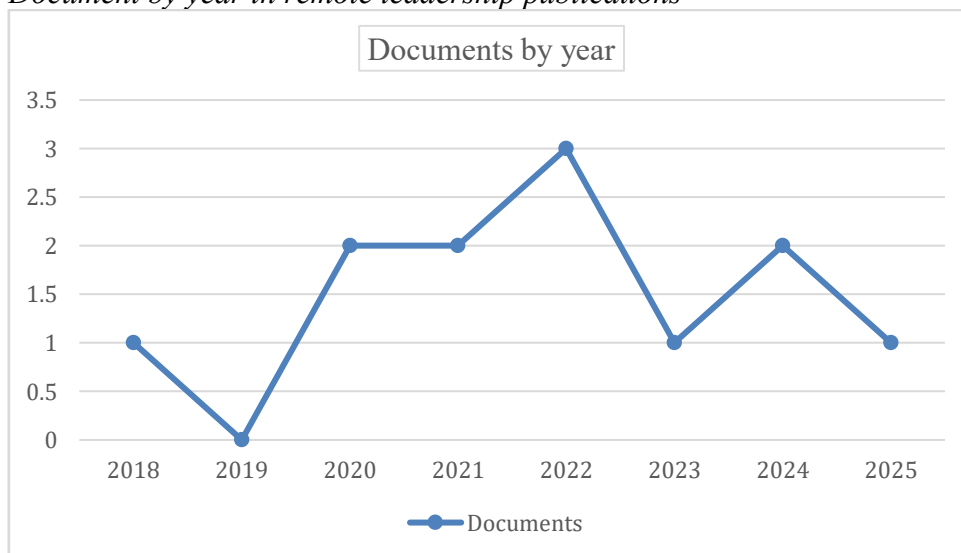
Results

This section presents the results of the previously analysed research by discussing our response to the first research question (RQ1). The findings reflect information on the development of academic publications, definitions of remote leadership, theoretical perspectives, methodological applications, and antecedents and consequences of remote leadership as identified by previous research. Data were collected from a number of scientific publications in the research domain covering a time span of the last few years from 2018 to 2025 (Figure 1).

Next, Figure 1 shows journals that publish articles related to the definition of remote leadership categorized based on the Scopus ranking index. Scopus in assessing journals in this study shows the classification of journal quality using the term "quartile", with four quartiles, namely Q1, Q2, Q3 and Q4. Q1 is the highest or most important cluster in terms of journal quality with 4 articles, followed by Q2 with 2 articles, followed by Q3 with 4 articles and Q4 with 2 articles.

Figure 1.

Document by year in remote leadership publications



Source: Authors' work (2026)

Table 2 presents journal titles along with their citation counts from articles on remote leadership indexed in the Scopus database. Most of these publications are concentrated in the Journal of Higher Education Policy and Leadership Studies, indicating its prominent role as a key source for research in this area. This also suggests that the journal has a strong focus on leadership issues, particularly within the context of higher education and remote work environments.

Table 2.

List of journal outlets

Index Scopus	Journal Name	Total
Q1	Human Resource Management Review	1 4

Index Scopus	Journal Name	Total
Q1	German Journal of Human Resource Management	1
Q1	Benchmarking	1
Q1	Organization Studies	1
Q2	Organization Management Journal	1
Q2	Journal of Workplace Learning	1
Q3	Journal of Higher Education Policy and Leadership Studies	2
		4
Q3	Zeitschrift fur Arbeits- und Organisationspsychologie	1
Q3	Central European Business Review	1
Q4	IBIMA Business Review	1
Q4	Canadian Journal of Educational Administration and Policy	1
		2

Source: Authors' work (2026)

Appendix 3 shows the journal titles with citations from articles related to remote leadership recorded in the Scopus database. Based on Appendix 3 show the article by (Maduka et al., 2018) is the most cited article with a total of 58 citations recorded in the Scopus database. Then the second rank is the article by (Turesky et al., 2020) with a total of 38 citations. The third rank is the article by (Hafermalz & Riemer, 2020) with a total of 37 citations. The fourth rank is the article (Krehl & Büttgen, 2022) with a total of 24 citations and other articles. The remote leadership in the public sector and non-profit organizations is a strategic approach to address the dynamics of remote work, limited resources, and demands for quality public services. Research on the effectiveness of this leadership style is still relatively limited, especially in the context of bureaucracy and social services.

Theory used of remote leadership

Based on Appendix 3 in this study, it can be seen that not all remote leadership articles use theory, from 12 articles that have been reviewed. there are also articles that use more than one theory and there are also articles that do not explain or mention the use of theory. Some studies do not use theory because the research aims to be more practical or descriptive, so there is no need to use theory. In addition, there is also research that focuses on experiments without explicitly relying on theory. Next, understanding the theoretical applications used in existing remote leadership research from several theories has been synthesized. These theories can be seen in table 3.

Grounded theory

The evolution of remote leadership is fundamentally anchored in Transformational Leadership Theory and E-Leadership Theory, which serve as the conceptual cornerstones for understanding how leadership is enacted in digitally mediated environments. Transformational Leadership Theory posits that leaders influence followers by articulating vision, inspiring motivation, and fostering individualized consideration (Bass & Avolio, 1995). In the context of remote work, these transformational behaviours become increasingly critical as leaders must

compensate for the loss of physical presence by intentionally building trust, empowering employees, and maintaining psychological connectivity through digital channels. As Liebermann et al. (2021) emphasize, “transformational leadership appears particularly relevant in virtual settings where physical distance reduces spontaneous interactions, requiring leaders to intentionally build motivation and trust through digital communication.” Complementing this view, E-Leadership Theory expands the leadership paradigm by positioning digital technologies not merely as tools, but as active mediators that shape leader–follower relationships (Avolio, Kahai & Dodge, 2000). Bauwens and Cortellazzo (2025) contend that “e-leadership emerges from the dynamic interaction between leaders, followers, and digital technologies, transforming traditional leadership functions into technology-mediated processes.” This indicates that remote leadership is simultaneously human-centered and technology-enabled, reflecting a dual dependency on relational dynamics and digital infrastructures.

Table 3.

Theories

Theory
Trait Theory
Behavior Theory
Situational Theory
Connectivity Theory
Adaptive Structuration Theory
E-leadership Theory
Conflict Theory
Transformational Leadership Theory
Organizational Support Theory
Trust Theory
Theory of Affordances
Socio-Technical Systems Theory
Digital Leadership
Change Management Theory
Job Demands-Resources Theory

Source: Authors' work (2026)

Other theories

To enrich this conceptual foundation, several supporting theories provide explanatory mechanisms for how remote leadership is enacted. Adaptive Structuration Theory (AST) explains that leadership practices are co-constructed through the ongoing interaction between human agency and technological structures, enabling leaders to appropriate digital tools in ways that shape organizational culture (DeSanctis & Poole, 1994). In line with this, Willermark and Islind (2022) assert that “leadership affordances are not embedded in the leader, but are enacted through the use of digital tools in response to environmental disruptions.” Trust Theory further mediates the effectiveness of remote leadership by highlighting the importance of psychological safety and credibility in virtual environments where monitoring and direct supervision are limited (Turesky et al., 2020). As Hafermalz and Riemer (2020) argue, “trust is the glue of virtual teams—without it, neither collaboration nor performance can be sustained in digitally

mediated environments.” Moreover, the Job Demands-Resources (JD-R) Theory positions remote leadership as a critical job resource that mitigates digital overload, enhances employee resilience, and promotes well-being in technology-intensive work contexts (Schmitt, 2024). Finally, Change Management Theory and Digital Leadership Theory contextualize remote leadership as a strategic response to environmental turbulence and digital transformation, where leaders must navigate complexity while enabling adaptability (Chew & Zainal, 2022). Collectively, these theories form an integrated conceptual lens, suggesting that remote leadership operates at the intersection of transformative influence, technological mediation, structural adaptation, and psychological empowerment, resulting in enhanced employee engagement, organizational resilience, and digital readiness.

Methodological applications

In an effort to understand the characteristics and research approaches to remote leadership, an analysis of 12 relevant scientific articles was conducted. The results of the study showed that the majority of studies that raised the topic of remote leadership used a qualitative approach, namely 10 articles (83%), while only 2 articles (17%) used a quantitative approach. This indicates that the issue of remote leadership tends to be explored in depth through descriptive and narrative approaches that allow for contextual understanding of complex social and organizational phenomena. The following is a graph of the approaches used from the research context of remote leadership in Appendix 4.

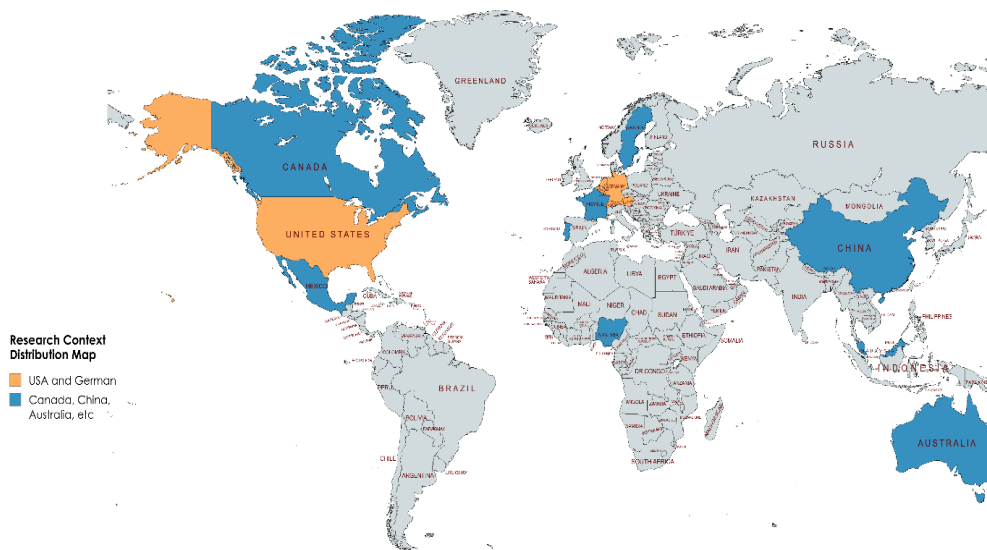
Based on their methodological approach, these studies employed a variety of strategies, such as narrative analysis (17%), quantitative surveys (17%), exploratory studies (8%), case studies (8%), and abductive approaches and analysis techniques using Unipack Questback (8% each). Although most were exploratory, a significant proportion of studies employed systematic frameworks to understand the dynamics and effectiveness of leadership in a remote work context. In terms of data analysis software, there was a variety of tools used, such as MAXQDA (17%), Nvivo (8%), SPSS and Anova (8%), and the McKinsey Framework (8%). However, the majority of articles (58%) did not explicitly mention the software used, suggesting that the primary focus of the research was more on the substance of the findings than the technical approach. Thus, the approaches used in this remote leadership research averaged 8 articles with qualitative approaches, followed by 2 articles with quantitative approaches, and finally 2 articles with conceptual approaches.

A review of the research context shows that the issue of remote leadership is widely studied in the education sector. Around 25% of articles discuss virtual leadership in schools and educational institutions, followed by the context of higher education, manufacturing, information technology, and health. These findings reinforce that the digital transformation of work and education has prompted researchers to re-examine leadership patterns that are appropriate for remote work conditions. In terms of geographic location, research is spread globally. The most articles came from the United States (17%), followed by Sweden, Portugal, Africa (Nigeria), Malaysia, Australia, Germany, Canada (Ontario), and Germany (Kiel)

each with 8%. One article was multi-contextual, conducted across countries (USA, UK, China, Australia, Germany, France, Mexico, and Singapore), and another article did not explicitly mention the country of origin of the research. The Research Context Distribution Map can be seen in Figure 2.

Figure 2.

Countries used for research on remote leadership



Source: Authors' work (2026)

The diversity of these countries shows that the phenomenon of remote leadership is a cross-border and cross-cultural issue that is increasingly relevant globally. Overall, the results of this literature review show that remote leadership is a topic that is gaining increasing attention in higher education, especially in the context of organizational digitalization and changes in the way of working due to the pandemic. However, literature reviews related to remote leadership in other public sectors, especially in Asia, have not been widely studied, so an in-depth analysis is needed. These studies provide important insights into adaptive leadership strategies, dynamic institutional contexts, and the complexity of social relations in virtual work environments.

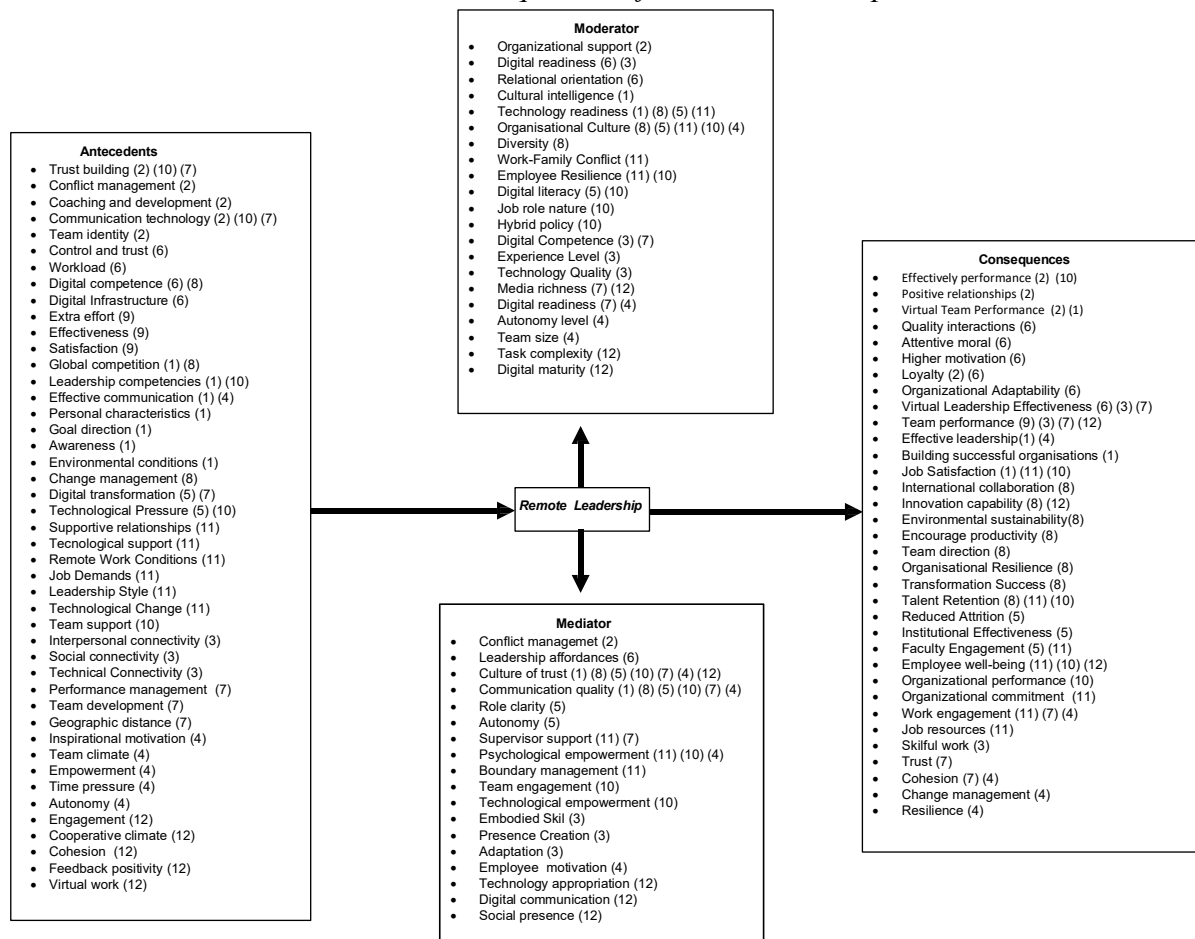
Antecedents and consequences of remote leadership

This section will discuss the variables that act as mediators and moderators in empirical research, influencing the mechanisms and contextual conditions of remote leadership that impact its outcomes. The findings are based on the results of 12 empirical studies identified in this systematic literature review, as outlined in the framework in Figure 3. Based on the framework of Antecedents and Consequences related to Remote Leadership, it shows that remote leadership is

not only determined by the personal attributes of the leader, but also by his/her ability to build a social presence, understand technology, and adjust leadership style to the virtual context. Meanwhile, the success of remote leadership will be reflected in various outcomes such as organizational change, positive work behaviour, and interpersonal connectivity within the team. To ensure the sustainability of these results, it is important for organizations to support leaders with technological resources, supportive work relationships, and appropriate autonomy, as indicated by the role of the moderator in the framework.

Figure 3.

Framework antecedents and consequences of remote leadership



Source: Authors' work (2026)

Antecedent

The literature review indicates that the factors contributing to the emergence of remote leadership are largely a combination of individual psychological aspects, team dynamics, organizational support, and technological readiness. From an individual perspective, characteristics such as proactive personality, trust-building, digital competence, self-efficacy, and personal awareness are key determinants influencing employee readiness to embrace remote work models (Maduka et al.,

2018; Turesky et al., 2020). Furthermore, technological confidence and readiness for digital change, both in the form of a digital mindset and the pressure of technological transformation (technological pressure), form the foundation for individuals' adaptive response to the demands of modern organizations (Willermark & Islind, 2022; Guzar & Bianchi-Laubsch, 2024).

At the team level, factors such as team identity, communication technology, interpersonal connectivity, social cohesion, and positive feedback strengthen digital social connectivity, which is central to creating cross-location collaboration (Hafermalz & Riemer, 2020; Liebermann et al., 2021). Team support and a cooperative climate serve as catalysts that foster employee emotional engagement and ensure effective team coordination in a virtual context (Hebert & Lovett, 2021; Chew & Zainal, 2022). Transformational and supportive leadership have also been shown to influence the formation of digital team identity and strengthen intrinsic motivation to achieve organizational goals (Ferreira et al., 2023).

From an organizational perspective, digital infrastructure readiness, remote work conditions, environmental conditions, and workload management are crucial factors supporting the effectiveness of remote leadership (Schmitt, 2024; Bauwens & Cortellazzo, 2025). Organizations that provide adequate technological support and implement flexible policies are better prepared for the shift to remote work models and are able to create an adaptive work environment (Krehl & Büttgen, 2022; Guzar & Bianchi-Laubsch, 2024)¹¹⁰. Factors such as employee satisfaction, engagement, global orientation, and supportive relationships also strengthen employees' positive perceptions of the organization, ultimately increasing commitment and loyalty (Ferreira et al., 2023).

Overall, this collection of antecedents confirms that the success of remote leadership is not only influenced by an individual's capacity to manage technology, but also determined by the organization's structural support, team dynamics, and integrated technology readiness (Maduka et al., 2018; Guzar & Bianchi-Laubsch, 2024; Bauwens & Cortellazzo, 2025). Thus, these antecedents form a strategic foundation for organizations in creating an effective, productive, and sustainable remote work ecosystem in the face of digital disruption and globalization.

Consequences

A literature review of 12 articles shows that implementing remote leadership has multidimensional impacts at the individual, team, and organizational levels. At the individual level, virtual leadership has been shown to improve employee performance (Turesky et al., 2020; Guzar & Bianchi-Laubsch, 2024), work morale and motivation (Chew & Zainal, 2022), and strengthen loyalty and trust in the organization (Maduka et al., 2018; Chew & Zainal, 2022). In addition, effective virtual leadership increases job satisfaction and employee engagement (Ferreira et al., 2023; Schmitt, 2024; Krehl & Büttgen, 2022), which in turn leads to increased organizational commitment (Schmitt, 2024; Guzar & Bianchi-Laubsch, 2024). Other consequences include increased employee well-being (Hebert & Lovett,

2021; Guzar & Bianchi-Laubsch, 2024) and talent retention (Guzar & Bianchi-Laubsch, 2024; Schmitt, 2024), which significantly reduces turnover intentions (Schmitt, 2024).

At the team level, the implementation of virtual leadership results in improved team performance (virtual team performance) and strengthened interpersonal relationships and cross-location digital collaboration (Turesky et al., 2020; Ferreira et al., 2023; Krehl & Büttgen, 2022). Virtual leaders are also able to establish clear team direction and create quality interactions (Hafermalz & Riemer, 2020), thereby strengthening team cohesion and increasing work effectiveness (Liebermann et al., 2021). International collaboration and cross-geographical work are also fostered thanks to the effectiveness of digital leadership, which enables teams to work synergistically within a global ecosystem (Chew & Zainal, 2022; Guzar & Bianchi-Laubsch, 2024).

At the organizational level, effective virtual leadership can improve leadership effectiveness (Ferreira et al., 2023; Schmitt, 2024; Krehl & Büttgen, 2022), strengthen innovation capability (Chew & Zainal, 2022), and encourage productivity (Guzar & Bianchi-Laubsch, 2024). SLR results also show that remote leadership contributes to transformation success (Chew & Zainal, 2022), strengthen organizational resilience (Schmitt, 2024), and create organizational adaptability (Willermark & Islind, 2022; Krehl & Büttgen, 2022). Furthermore, this leadership model supports environmental sustainability through reduced physical activity and resource efficiency (Guzar & Bianchi-Laubsch, 2024; Bauwens & Cortellazzo, 2025).

Overall, these findings confirm that remote leadership not only improves individual performance and team effectiveness but also creates resilient, innovative, and highly competitive organizations in the face of digital disruption. In other words, virtual leadership acts as a strategic catalyst in creating long-term competitive advantage in the evolving global digital era (Ferreira et al., 2023; Schmitt, 2024; Bauwens & Cortellazzo, 2025).

Mediator

Mediator variables play a central role in bridging the influence of antecedents on the effectiveness of remote leadership and various organizational outcomes. Factors such as conflict management (Turesky et al., 2020)², communication quality (Schmitt, 2024; Hebert & Lovett, 2021; Guzar & Bianchi-Laubsch, 2024; Krehl & Büttgen, 2022; Chew & Zainal, 2022), and culture of trust (Maduka et al., 2018; Chew & Zainal, 2022; Hebert & Lovett, 2021; Guzar & Bianchi-Laubsch, 2024; Liebermann et al., 2021; Bauwens & Cortellazzo, 2025) are key mechanisms that ensure that the dynamics of interpersonal relationships in a virtual work environment can be translated into effective collaboration and improved team performance. Role clarity and autonomy (Hebert & Lovett, 2021) provide a sense of task certainty while increasing employees' psychological control over their work.

Supervisor support (Schmitt, 2024; Krehl & Büttgen, 2022) and leadership affordances (Chew & Zainal, 2022) have been shown to strengthen a sense of connectedness and support employees in navigating the complexities of digital work. At the same time, psychological and technological empowerment (Schmitt, 2024; Guzar & Bianchi-Laubsch, 2024; Ferreira et al., 2023) increase employees' confidence in utilizing technology and making independent decisions. This effect is further enhanced by increased team engagement and employee motivation (Guzar & Bianchi-Laubsch, 2024; Liebermann et al., 2021), which strengthens emotional attachment to the organization and boosts productivity.

Other mediators, such as boundary management (Schmitt, 2024), presence creation, and adaptation (Hafermalz & Riemer, 2020), help overcome the limitations of physical distance by creating an authentic virtual presence. Meanwhile, social presence, technology appropriation, and digital communication (Bauwens & Cortellazzo, 2025) demonstrate how employees not only use technology as a work tool but also integrate it as a strategic medium to create collaborative work experiences. Furthermore, embodied skills (Hafermalz & Riemer, 2020) emphasize the importance of human adaptive abilities in expressing emotions and leadership through digital media.

Overall, these mediator variables function as psychological and socio-technological mechanisms that transform antecedent influences into positive outcomes (Schmitt, 2024; Guzar & Bianchi-Laubsch, 2024; Bauwens & Cortellazzo, 2025). Thus, mediators play a strategic role in ensuring that virtual leadership is not only a response to technological developments, but also an integrative mechanism that unites individuals, technology, and organizations in an inclusive, adaptive, and high-performance work ecosystem.

Moderator

This section discusses moderating factors that influence the strength and direction of the relationship between remote leadership and various organizational outcomes. Moderator variables act as contingency elements that can strengthen or weaken the influence of antecedents on the effectiveness of virtual leadership. Organizational support (Turesky et al., 2020) and digital readiness (Willermark & Islind, 2022; Hafermalz & Riemer, 2020), as well as technology readiness (Chew & Zainal, 2022; Hebert & Lovett, 2021; Schmitt, 2024; Liebermann et al., 2021; Guzar & Bianchi-Laubsch, 2024) are important factors in ensuring organizations have adequate infrastructure, policies, and resources to support the effective implementation of virtual work. Strong organizational support has been shown to increase employee trust and accelerate the adoption of digital transformation.

Furthermore, cultural dimensions such as cultural intelligence (Maduka et al., 2018), diversity (Chew & Zainal, 2022), and organizational culture (Chew & Zainal, 2022; Hebert & Lovett, 2021; Schmitt, 2024; Guzar & Bianchi-Laubsch, 2024; Liebermann et al., 2021) play a significant role in determining how individuals from diverse cultural backgrounds respond to digital leadership and the

dynamics of remote work. Organizations with inclusive and adaptive cultures tend to be more successful in implementing remote leadership.

At the individual level, moderators such as employee resilience (Schmitt, 2024; Guzar & Bianchi-Laubsch, 2024), digital literacy (Guzar & Bianchi-Laubsch, 2024), experience level (Hafermalz & Riemer, 2020), and autonomy level (Liebermann et al., 2021) influence the extent to which employees are able to adapt to the complexity of digital tasks. Employees with high levels of technological literacy and psychological resilience have been shown to be more effective in responding to virtual leaders' instructions and maintaining productivity under pressure. Conversely, work-family conflict (Schmitt, 2024) and job role nature (Guzar & Bianchi-Laubsch, 2024) have the potential to weaken the effectiveness of virtual leadership if work-life balance is not well managed. Technological factors such as media richness (Bauwens & Cortellazzo, 2025), technology quality (Liebermann et al., 2021), digital maturity (Bauwens & Cortellazzo, 2025), and hybrid policies (Guzar & Bianchi-Laubsch, 2024) are key determinants of effective virtual communication and cross-platform coordination. Organizations with high digital maturity and clear hybrid work policies demonstrate greater adaptive capacity in maintaining team engagement and performance. Furthermore, team size (Liebermann et al., 2021) and task complexity (Hebert & Lovett, 2021) serve as structural moderators that determine the effectiveness of task distribution under virtual leadership.

Overall, these moderator variables demonstrate that the effectiveness of remote leadership depends not only on the qualities of the individual leader but is also significantly influenced by organizational readiness, digital culture, task characteristics, and employee resilience (Chew & Zainal, 2022; Schmitt, 2024; Bauwens & Cortellazzo, 2025). Thus, moderators function as dynamic filters that determine whether antecedent influences will produce positive consequences or create obstacles in an organization's digital transformation process.

Discussion

This section, which addresses the second research question (RQ2), highlights the research gaps in the relevant literature on remote leadership and offers a roadmap for future research. Amidst this complexity, a new need for remote or virtual leadership has emerged. Leadership in a virtual environment requires not only administrative skills, but also digital skills, cross-cultural communication, and the ability to build trust in conditions of minimal physical interaction. Avolio and Kahai (2003) stated that leadership effectiveness in virtual teams is highly mediated by technology. Leaders are challenged in understanding and effectively utilizing technology as a management tool, as reliance on digital platforms can be a barrier when not accompanied by clear direction, behavioural consistency, and empathetic communication. Furthermore, Trenerry et al., (2021) emphasized that remote leadership requires specific competencies, such as transformational abilities, digital

communication skills, and technological savvy. When leaders fail to utilize these elements effectively, technology can actually become a source of organizational disintegration through the emergence of distrust, disorientation, and weak motivation. In addition, cross-cultural challenges, inclusion, and diversity are also important aspects that cannot be ignored in leading global virtual teams (Eisenberg et al., 2021). In another perspective, Helmold (2021) stated that change management capabilities are at the core of successful remote leadership influenced by digital dynamics that require leaders to be able to direct organizations in unstable and changing situations.

The synthesis based on each study's contribution to the variables in Framework 5 is explained in depth, drawing on the results of a systematic review of 12 articles. In the antecedent stage, Maduka et al. (2018) emphasized the importance of core competencies for virtual team leaders, such as technological skills, team management, and creating a positive climate. These competencies are further developed by Bauwens & Cortellazzo (2025), who outlined six perspectives on e-leadership, encompassing remote management, technology integration, and leadership adaptation in a digital context. Krehl & Büttgen (2022) highlighted the complexity of using digital tools in remote leadership, while Liebermann et al. (2021) presented the challenges of transformational leadership when telework was suddenly implemented in the public sector. Chew & Zainal (2022) added a perspective on change-oriented virtual leadership in the higher education sector, while Turesky et al. (2020) and Hafermalz & Riemer (2020) emphasized the role of trust, conflict management, and interpersonal connectivity in building effective social relationships in virtual environments.

In the mediator and moderator stages, Willermark & Islind (2022) identified leadership affordances that enable leadership style adaptation to foster a positive team climate, while Hebert & Lovett (2021) emphasized the importance of assigning meaningful tasks and creating a collaborative learning environment. Guzar & Bianchi-Laubsch (2024) reinforced the aspects of social presence and the formation of a positive team climate during the pandemic, and Ferreira et al. (2023) demonstrated that positive perceptions of virtual leadership can encourage proactive work behaviour and constructive team change. The consequences stage is evident in Schmitt's (2024) focus on employee well-being in remote leadership, emphasizing meaningful work and psychological support as the end result of a combination of competencies, social relationships, and effective organizational support. Overall, these findings suggest that successful remote leadership requires a foundation of technological and social competencies (antecedents), optimized through the creation of a positive climate and social presence (mediators and moderators), ultimately resulting in employee well-being and more adaptive team performance (consequences).

In a digital landscape that accelerates the shift in global work patterns, remote leadership has become a strategic element in ensuring the sustainability and

effectiveness of organizations, including in the public sector. However, leadership challenges in a virtual environment cannot only be solved by adopting conventional technical strategies or practices. Pullan (2016) emphasized that to form effective remote leaders, a more comprehensive and transformative approach is needed through an approach that involves the formation of new mindsets, attitudes, skills, and knowledge that are in accordance with the characteristics of digital work. This transformation is not only structural or administrative, but also reflects a profound cognitive and behavioural shift. A leader in a remote context must be able to build and maintain healthy working relationships through technology, create a meaningful presence even without physical interaction, and direct virtual teams towards achieving common goals despite the limitations of non-verbal communication, time differences, and geographic and social diversity.

Conclusion

This study is a systematic and comprehensive literature review on the concept of remote leadership, providing a deeper understanding of the position of this study and recommendations for future studies. Theoretical concepts related to leadership are currently experiencing rapid development where new positive leadership styles have emerged. This study also explores opportunities for historians to develop and expand the existing literature in this field. Remote leadership is proposed to address issues related to leaders who are less adaptive to the development of digital technology, especially in the public sector. Therefore, this study systematically examines existing research on remote leadership in its entirety. Although this concept is still in its development stage with various definitions emerging, several studies have analysed the variables that influence remote leadership at both the individual and organizational levels. Through the identification and evaluation of 12 articles, the findings indicate that there are additional insights into the development of remote leadership, the conceptualization of remote leadership, the use of theory, methodology, factors that influence and the impact of remote leadership and also present possibilities for future researchers to develop and expand the literature in this domain. These findings understand the importance of factors that contribute to the effectiveness of leadership in forming effective virtual team collaboration, considering that the public sector has a great influence on stakeholders as a whole. Future research is expected to provide deeper and more applicable insights in addressing issues related to remote leadership in various sectors, especially in Asia, including Indonesia.

Thus, from the 12 articles as a whole, it can be concluded that effective virtual leadership requires a combination of technological capabilities, adaptive leadership styles (especially transformational), and the creation of a social presence. Strong antecedents such as digital skills, remote leadership, and organizational support will influence mediators such as well-being and collaboration, which ultimately impact consequences such as a positive team climate, interpersonal connectivity, and

proactive work behaviour. These studies collectively emphasize the importance of trust-building and meaningful engagement as a link between antecedents and outcomes in the model.

While the findings confirm the importance of trust, digital competence, and transformational leadership, this study also reveals a critical tension between autonomy and control in remote leadership. Excessive autonomy without structured coordination may reduce accountability, particularly in public sector organizations characterized by bureaucratic systems. Therefore, this study provides practical insights for public sector organizations to encourage leaders to develop digital communication competencies, foster trust-based relationships, and implement structured coordination mechanisms in virtual environments. Furthermore, organizations should invest in digital infrastructure and leadership development programs tailored to the remote context. This study emphasizes that remote leadership is not merely a technological adaptation, but a strategic capability that integrates human, technological, and organizational dimensions to achieve sustainable performance in the digital era.

Limitation, contribution and future research

This challenge becomes even more complex when associated with the public sector, which is basically oriented towards public service, high accountability, and diverse stakeholder interests. In a bureaucratic environment that tends to be complex, public leaders who lead remotely must be able to maintain team cohesion, build trust, and ensure service effectiveness even digitally. Liao (2017) strengthens this argument by showing that the higher the level of virtuality of a team characterized by physical separation, dominance of technology-based communication, and minimal direct interaction, the greater the impact of leader behaviour on the dynamics and performance of the team as a whole. Remote leadership demands a unique and adaptive approach to effectively manage virtual team dynamics (Bell & Kozlowski, 2002). This indicates that in a virtual work environment, especially in the public sector, the role of leaders is becoming increasingly central and complex, not only as task directors, but also as managers of the organization's social structure and collective drivers from a distance. Therefore, public organizations need to realize that remote leadership is not just a technical shift, but a multidimensional competency that includes technological capabilities, interpersonal sensitivity, and adaptation to cultural and bureaucratic differences. This competency is important, especially in managing cross-regional teams that are demographically and functionally diverse, in order to remain aligned with the mission of public service that is oriented towards quality and sustainability.

This study makes significant contributions to future research. First, it develops an integrative conceptual framework of remote leadership by systematically mapping antecedents, mediators, moderators, and consequences,

which has not been comprehensively synthesized in prior studies. Second, this study specifically highlights the public sector context, which remains underexplored compared to private sector-focused research. Third, this study identifies critical research gaps and proposes a future research agenda, particularly emphasizing non-Western and developing country contexts such as Asia. Unlike previous reviews that focused on virtual leadership in general, this study provides a more structured and multi-level analytical framework that connects the individual, team, and organizational dimensions of remote leadership. Overall, this study successfully synthesizes existing research. The search strategy, inclusion criteria, and article selection process are clearly described, demonstrating a rigorously designed research process. However, it is recommended that future research be strengthened by expanding the data sources and sample size to be more comprehensive and encompass a broader range of perspectives. Although Scopus was chosen as the primary database in this study due to its comprehensive coverage and high-quality indexing, the study acknowledges that relying on a single database may limit the scope of the literature. Future studies are encouraged to incorporate additional databases such as Web of Science and Google Scholar to enhance coverage and robustness. It can also suggest how organizations can more effectively integrate values relevant to the needs of virtual teams in the public sector in the digital age.

Author contribution

Sinta Fanidatus Solichah: Conceptualization, Methodology, Data Curation, Formal Analysis, Writing – Original Draft. **Fiona Niska Dinda Nadia:** Conceptualization, Supervision, Validation, Writing – Review & Editing. All authors have read and approved the final version of the manuscript.

Declaration of interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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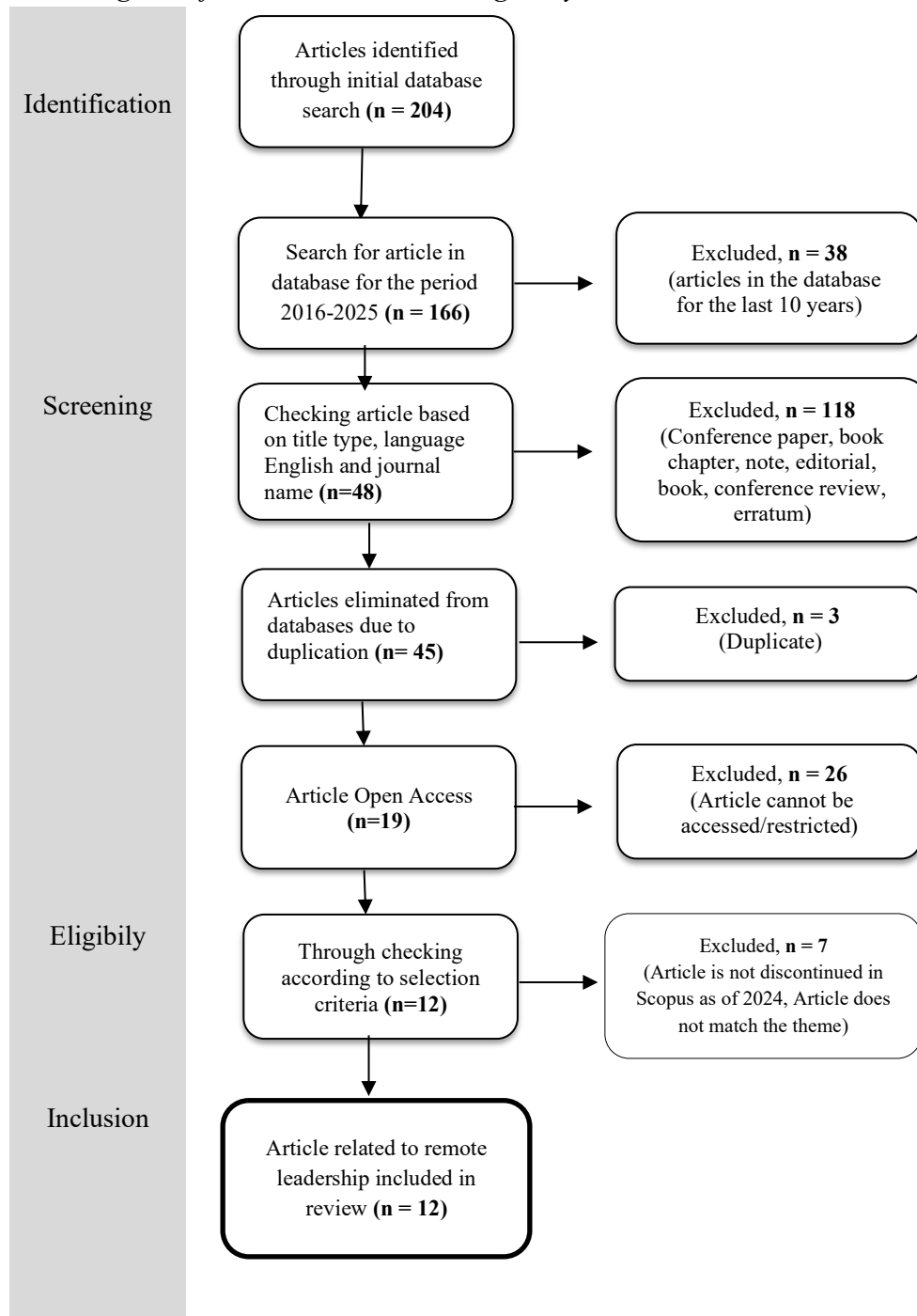
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Appendix 1.*Definition of remote or virtual leadership*

Author	Definition of Remote or Virtual Leadership
Maduka <i>et al.</i> , 2018	Virtual leadership is defined as the ability of leaders to coordinate, direct, and motivate teams remotely through technology by emphasizing the importance of trust, effective communication, and collaboration to achieve organizational goals.
Turesky <i>et al.</i> , 2020	Virtual leadership is a leadership practice in digital teams that requires deep interpersonal understanding to manage technology-mediated trust and conflict, and requires structural support from the organization.
Hafermalz & Riemer, 2020	Virtual leadership is described as leadership that emphasizes "remote presence" through interpersonal connections built with digital communication to bridge geographic distances between team members.
Liebermann <i>et al.</i> , 2021	Remote leadership in the context of the public sector is leadership that faces sudden disruption, demands rapid adaptation of technology and change management, and is able to maintain team effectiveness from a distance.
Hebert & Lovett, 2021	Virtual leadership is understood as the ability to lead academic communities in online spaces, balancing the use of technology, empathetic communication, and flexible work coordination.
Willermark & Islind, 2022	Virtual leadership is digital leadership that allows the utilization of affordances or potential actions through digital media, especially in the context of virtual education.
Krehl & Büttgen, 2022	Remote leadership is defined as the practice of leading from a distance that requires adaptation to technological complexity, indirect communication, and maintaining social relationships in conditions of uncertainty.
Chew & Zainal, 2022	Virtual leadership is a leadership framework that emphasizes resilience, change orientation, and strategic management of virtual teams through a transformational and collaborative approach.
Ferreira <i>et al.</i> , 2023	Virtual leadership is understood as team members' perceptions of leadership behaviours displayed in a virtual environment, particularly in terms of communication, clarity of vision, and social support.
Guzar & Bianchi-Laubsch, 2024	Virtual leadership is leadership practiced by higher education leaders online, emphasizing crisis adaptability, use of technology, and collaborative management across locations.
Schmitt, 2024	Remote leadership is defined as a leadership style that is executed remotely and impacts employee psychological well-being through inclusive communication and attention to team members' personal needs.
Bauwens & Cortellazzo, 2025	E-leadership is a form of leadership that is carried out through digital technology mediation, encompassing unique styles, strategies, and challenges in decision-making and ongoing virtual team interactions.

Source: Authors' work (2026)

Appendix 2*Flow diagram of searched, screened, eligibility, and included studies*

Source: Authors' work (2026)

Appendix 3.*Number of citations of articles*

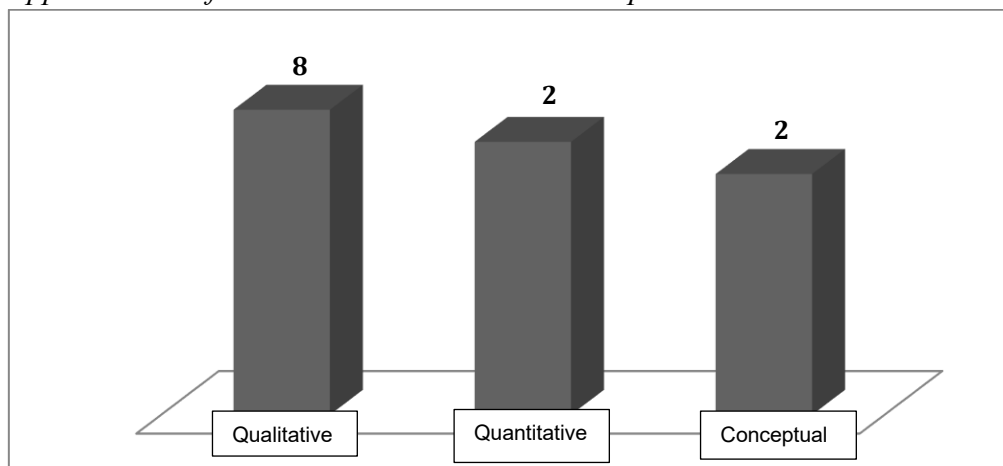
Author	Article Title	Citations Number
(Maduka et al., 2018)	Analysis of competencies for effective virtual team leadership in building successful organisations	58
(Turesky et al., 2020)	A call to action for virtual team leaders:	38

Author	Article Title	Citations Number
	practitioner perspectives on trust, conflict and the need for organizational support	
(Hafermalz & Riemer, 2020)	Interpersonal Connectivity Work: Being there with and for geographically distant others	37
(Liebermann et al., 2021)	Abrupt Implementation of Telework in the Public Sector during the COVID-19 Crisis: Challenges to Transformational Leadership	20
(Hebert & Lovett, 2021)	Elements for Academic Leadership in a Virtual Space	3
(Willermark & Island, 2022)	Adopting to the virtual workplace: identifying leadership affordances in virtual schools	13
(Krehl & Büttgen, 2022)	Uncovering the complexities of remote leadership and the usage of digital tools during the COVID-19 pandemic: A qualitative diary study	24
(Chew & Zainal, 2022)	Building a Resilient Change-Oriented Virtual Leadership Framework for the Higher Education Sector: A Narrative Review	5
(Ferreira et al., 2023)	An Empirical Study on Virtual Team Leadership Perception	2
(Guzar & Bianchi-Laubsch, 2024)	Examining the Virtual Leadership of Leaders in Higher Education During the COVID-19 Pandemic: A Case Study	1
(Schmitt, 2024)	Employee Well-Being and The Remote Leader: A Systematic Literature Review	5
(Bauwens & Cortellazzo, 2025)	The different faces of e-leadership: Six perspectives on leading in the era of digital technologies	2

Source: Authors' work (2026)

Appendix 4

Approach used for research on remote leadership



Source: Authors' work (2026)