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# Remote work challenges and opportunities: a focus on relational capital in public administration

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**ABSTRACT**

The COVID-19 pandemic has significantly accelerated the adoption of digital technologies within organizations, reshaping both the nature of employee work and knowledge management and sharing methods. However, remote work has raised some challenges, especially regarding team cohesion, trust, and effective communication. This paper aims to investigate the impact and relationship of remote working on intellectual capital, with a focus on relational capital within public administration (PA). Using a qualitative case study approach, including interviews and document analysis, this study explored how remote work influences relational capital in a PA context. The study focused on a specific municipality located in Italy. Preliminary findings indicate that working from home apparently influenced the relational and human capital more than the structural capital in PA. The transition to a virtual work environment has highlighted the importance of robust relational networks and effective communication channels, underscoring both opportunities and challenges for maintaining organizational culture and collaboration. This study contributes to the existing literature by exploring key factors that support or hinder the effective use of intellectual capital within a remote working context and provides practical recommendations for improving collaboration, trust, and organizational effectiveness. Additionally, it offers theoretical implications for the dynamics of intellectual capital management in the digital age, particularly within the public sector.

La pandemia di COVID-19 ha accelerato in modo significativo l'adozione delle tecnologie digitali all'interno delle organizzazioni, rimodellando sia la natura del lavoro dei dipendenti che i metodi di gestione e condivisione delle conoscenze. Tuttavia, il lavoro a distanza ha sollevato alcune sfide, soprattutto per quanto riguarda la coesione del team, la fiducia e la comunicazione efficace. Questo lavoro si propone di indagare l'impatto e la relazione del lavoro da remoto sul capitale intellettuale, con particolare attenzione al capitale relazionale all'interno della pubblica amministrazione (PA). Utilizzando un approccio qualitativo di case study, che include interviste e analisi dei documenti, questo studio ha esplorato come il lavoro a distanza influenzi il capitale relazionale in un contesto di PA. Lo studio si è concentrato su un comune specifico situato in Italia. I risultati preliminari indicano che il

lavoro da casa sembra aver influenzato il capitale relazionale e umano più del capitale strutturale nella PA. La transizione verso un ambiente di lavoro virtuale ha evidenziato l'importanza di solide reti relazionali e canali di comunicazione efficaci, sottolineando sia le opportunità che le sfide per mantenere la cultura organizzativa e la collaborazione. Questo studio contribuisce alla letteratura esistente esplorando i fattori chiave che supportano o ostacolano l'uso efficace del capitale intellettuale in un contesto di lavoro a distanza e fornisce raccomandazioni pratiche per migliorare la collaborazione, la fiducia e l'efficacia organizzativa. Inoltre, offre implicazioni teoriche per le dinamiche della gestione del capitale intellettuale nell'era digitale, in particolare nel settore pubblico.

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**Keywords:** remote working, human capital, intellectual capital, relational capital, public administration

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## 1 – Introduction

Digitalization in the public sector has profoundly transformed organizations and society (Battisti *et al.*, 2022; Toscani, 2023). Organizations have been able to overcome geographical and physical constraints using digital technologies, which have made remote work easier and encouraged work flexibility (Ansell & Miura, 2020; Faludi & Crosby, 2021). The COVID-19 epidemic has accelerated this change by requiring organizations to quickly find new ways of working to continue operating despite restrictions (Palumbo *et al.*, 2024; Singh *et al.*, 2022). The use of digital platforms, collaborative software, and advanced communication tools became essential during the pandemic, for ensuring organizations' continuity and supporting remote work (Matikainen *et al.*, 2023). As a result, there was a shift in productivity as well as new challenges with data protection, human resource management, employee engagement and wellbeing. Understanding how these changes impact the efficacy and efficiency of remote work is essential, as digitalization has opened new avenues for knowledge acquisition, exchange, and application (Esposito, 2020; Haynes, 2015; Kraus *et al.*, 2023).

Remote working has significantly reshaped the landscape of organizations reevaluating how they design workflows and manage teams (Aleem *et al.* 2023; Felstead, 2022). Although remote work has given workers greater autonomy and flexibility, it also brings up additional challenges, such as keeping cohesiveness among teams and ensuring productivity in a virtual setting (Choi, 2018; Todisco *et al.*, 2023). Organizations have come up with innovative solutions to these issues, such as creating virtual communication channels, encouraging a sense of belonging among remote workers, and implementing new performance management systems designed for the peculiarities of remote work (Sousa *et al.* 2023).

In the context of remote working, intellectual capital assumes a central role, as face-to-face interactions are replaced by virtual communications, which can limit the spontaneity and depth of knowledge sharing (Kianto *et al.*, 2023). However, scholars have paid little attention to analyzing the relationship between remote working and intellectual capital (Mignenan, 2022). While there has been considerable attention on remote work's technological and operational aspects, the implications for intellectual capital have often been underexplored (Soga *et al.* 2022). This research gap highlights the need for a better understanding of how remote working influences the dynamics of knowledge sharing, employee engagement, and the development of organizational capabilities.

This study explores the impact and relationship of remote working on intellectual capital within public administration (PA), particularly emphasizing relational capital. By examining how remote work affects relationships, trust, and collaboration among employees, this research

aims to understand its potential impacts on employee performance and overall organizational effectiveness. The qualitative methodology involves a case study conducted within a PA. Specifically, interviews were conducted, and document analysis was performed to answer the research question.

We focus on an Italian municipality, since Italy was among the first countries to have to respond to the pandemic, implementing *ad hoc* measures and rapidly adapting its administrative structures to the new emergency needs (Ceron *et al.*, 2021). Italian municipalities, like businesses or other public administrations, had to manage the emergency and reorganize themselves to adapt their management to the post-Covid changes (Malandrino *et al.*, 2020). Preliminary findings indicate that remote working has had more significant implications for relational and human capital compared to structural capital within the PA. The shift towards remote work has highlighted how crucial it is to keep up solid interpersonal networks and efficient lines of communication. This shift has highlighted the advantages and disadvantages of maintaining corporate culture and promoting cooperation in a remote setting. Although remote work has given workers more freedom and flexibility, it has also made it harder to maintain the depth of in-person contacts that are essential for establishing trust and sustaining solid professional relationships.

This research contributes to the literature expanding the understanding of intellectual capital in the context of remote work of PA (Di Giulio & Vecchi, 2023; Dumay, 2016; Mele *et al.*, 2023; Pass & Ridgway, 2022). It highlights key factors that either help or hinder the efficient use of intellectual capital in a remote work context and provides guidance on how organizations should handle the challenges of relational capital management in a virtual environment (Mignenan *et al.*, 2022; Toscani, 2023). The study offers practical recommendations for improving cooperation, trust, and general organizational efficacy in the digital age by offering a thorough examination of how remote work affects relational capital (Trequattrini *et al.*, 2021).

After the Introduction, Section 2 provides a literature review focusing on digitalization in the public sector, remote working, and dimensions of intellectual capital. Section 3 describes the methodology employed in the study and Section 4 presents and discusses the findings. Lastly, Section 5 concludes the paper by providing implications, limitations, and directions for future research.

## 2 – Literature review

### 2.1 – Digitalization in Public Administration

Digitalization is one of the declared goals of PA and governments in recent decades (de Assis Dornelles *et al.*, 2022; Migone *et al.*, 2025). Digitalization is used to refer to different areas of PA ranging from communication between public administration and the different subjects with which it interacts, data storage and archiving to interactions and services digitally offered to citizens (Gagliardo *et al.*, 2024; Di Giulio & Vecchi, 2023). These interventions of public administration are part of a larger number of reforms that have pervaded different areas of the public sector, such as the New Public Management (NPM) aimed at improving the measurement and evaluation of performance (Lane, 2002; Haynes, 2015). Born in the 80s as a process of renewal of public administration, NPM has been widely studied, giving rise to different definitions, often not convergent (Mussari, 2022). Within the different positions, some argue that “NPM is a two-level phenomenon. At bigger level it is a general theory or doctrine that the

public sector can be improved by the importation of business concepts, techniques and values... Iben, the second, at more mundane level, NPM is a bundle of specific concepts and practices" (Pollitt & Dan, 2013, p. 9). Within this context of reforms, digitalization was considered as a key to improving the performance of PA. Innovation could represent a solution to the inefficiencies and rigidity of PA processes (Dunleavy & Margetts, 2015).

Nevertheless, digitalization serves as the primary catalyst for improved internal integration and enhanced levels of coordination (Ansell & Miura, 2020). Digitalization can integrate with current processes, products, and services and facilitate the creation of new ones (Lombardi & Mangiarotti, 2019). Indeed, PA can benefit from multiple advantages thanks to digital innovation which is related to the reprogramming of existing procedures and therefore to the modernization of the PA as well as to a rationalization of public spending (Migone *et al.*, 2025). Furthermore, the use of digital technologies enables the PA to enhance its relationship with the final user, who is at least able to access services more easily. Previous studies have explored various aspects of digital innovation in the public sector (Hong *et al.*, 2022).

Some authors have analysed what are the key determinants of innovation in the public sector (Lonti & Verma, 2003; Bernier *et al.*, 2015; Faber *et al.*, 2020; Xanthopoulou *et al.*, 2023). Other studies have explored public sector digitalization, focusing on a specific context (Ylipulli & Luusua, 2020; Berman *et al.*, 2024). Moreover, research has examined the critical factors associated with implementing digital innovation in the public sector (Plesner & Justesen, 2022). One aspect worth considering is that, despite the evolving interest in literature on the topic of digitalization in the public sector, according to the Digital Economy and Society Index (DESI) 2022, Italy ranked 18th out of the 27 EU member states. To address this issue, the introduction of a plan named "*Italy Digital 2026*" has been initiated, focusing on seven core investments: digital infrastructure, enabling and facilitating cloud migration, data and interoperability, digital services and citizen engagement, cybersecurity, and the digitalization of major central administrations. The goal of this program is to make the PA a supporter of citizens and businesses, providing ever more efficient and easily accessible services.

## 2.2 – Remote Working in Public Administration

The Covid-19 pandemic suddenly changed the habits of many workers in the last five years (Aleem *et al.*, 2023; Battisti *et al.*, 2022; Romanelli, 2024). Indeed, the coronavirus has forced employees to work from home, overturning a deep-rooted belief that work and home belonged to separate spheres of everyone's life (Felstead, 2022; Malandrino *et al.*, 2020). Remote working has been the way to continue carrying out organizations' activities regularly (Todisco *et al.*, 2023).

With the provisions of the Italian Decree-Law 9/2020 and Circular 1/2020 of the Department for the Public Service, some measures have been adopted to promote the use of flexible working arrangements and work-from-home in the Italian PAs. This new habit has spread under the names of remote working or smart working, referring to a type of flexible work that allows individuals to work without time and location constraints (Palumbo *et al.*, 2024). Smart working, through the utilization of emerging technologies and innovation, ensures a new organization of work in the private and public sectors (Decastri *et al.*, 2020; Hur *et al.*, 2019). "*Housewifisation*" of work has accelerated the digitalization process (Risi & Pronzato, 2021; Faludi & Crosby, 2021).

Remote work has become an opportunity to transform the organization into a digital one (Edelmann *et al.*, 2021; Matikainen *et al.*, 2023). This transformation makes it possible to achieve

greater organizational flexibility, which has an impact on workers. Therefore, technological transformation is considered together to people; its spread, by improving individual well-being, creates new human relationships due to the new work experience (Kraus *et al.*, 2023; Todisco *et al.*, 2023). Smart working has long-standing roots, dating back to teleworking, which due to technological limitations did not evolve significantly until the emergence of telecommuting (Mele *et al.*, 2023; Romanelli, 2024). Despite this, the public sector and in particular the PA have been more cautious about implementing this new form of work (Decastri *et al.*, 2019; Choi, 2018; Edelman *et al.*, 2021). This new type of work has also led to a new categorisation of workers who can be either remote workers or on-site workers, which in turn can be distinguished between essential and non-essential (Stefano *et al.*, 2021). The distinction between essential workers and non-essential workers has led to inequalities, with some workers having to continue working on-site or remotely, while others have had to suffer job and income losses (Pass & Ridgway, 2022).

Agile working and teleworking were formally promoted in the PAs (Law No. 124/2015, article 14) to balance the private and professional lives of public employees. Then, Law 81/2017 further clarified that agile working is accessible to both public and private sector employees, ensuring no worker category is excluded. However, the PAs face some challenges such as the predominance of senior staff, leading to innovation resistance (Decastri *et al.*, 2020) and lower level of productivity compared to the private sector, which can be attributed to the presence of outdated work organizational models and organizational rigidity (Ashock *et al.*, 2021; Taylor and Wright, 2004; Wankhade *et al.*, 2018; Pianese *et al.*, 2023). The lack of flexibility in work organization models negatively impacts workers' ability to manage their time effectively and the ability to increase productivity by leveraging their employees' talents (Decastri, 2020).

### **2.3 – Intellectual Capital: Human, Relational and Structural Dimension**

In the knowledge economy (Zanda, 2012), intellectual capital is a strategic and intangible asset. It can be defined as “*intellectual material – knowledge, information, intellectual property, experience – that can be put to use to create wealth*” (Stewart, 1997, p. XX). To align with the value-creation perspective of researchers and practitioners, Dumay (2016) substitutes “*wealth*” with “*value*” in the previous quote. International Accounting Standard (IAS) 38, issued by the International Accounting Standards Board, defines intangible assets underlining their no monetary nature and lack of any physical form. Moreover, intangible assets support companies in achieving goals and can actively influence their intrinsic value.

Following academic literature, intellectual capital consists of three sub-components: human capital, relational (or external) capital and structural (or internal) capital (Guthrie & Petty, 2000; Lombardi, 2021; Secundo *et al.*, 2016; Secundo *et al.*, 2023; Trequattrini *et al.*, 2012). Human capital refers to managers' and employees' abilities, knowledge, skills, and experiences (Lev & Schwartz, 1971; Trequattrini, 2008). It encompasses both explicit conceptual knowledge as well as more implicit knowledge (Esposito, 2020).

Structural capital is owned by the company. It consists of know-how, formal and informal procedures, intellectual property, intranet, best practices, corporate values and organizational culture (Trequattrini, 2008; Stewart, 1999). It also encompasses intellectual assets, validated by patents and copyrights (Trequattrini, 2008). Guthrie and Petty (2000) divided structural capital into two components: intellectual property (e.g. Patents, copyrights, and trademarks) and

infrastructure assets (e.g. Management philosophy, corporate culture, management processes, information systems, networking systems, financial relations).

Relational capital depends on the internal and external interconnection with stakeholders, which arises from the relationship between the company systems and its surrounding environment (Manes Rossi *et al.*, 2016; Mignenan *et al.*, 2022; Trequattrini *et al.*, 2013). Furthermore, it “...includes the organization’s relational system comprising elements such as the company’s reputation and trust” (Trequattrini *et al.*, 2013, p. 393). Moreover, relational capital can be defined as the value generated with internal and external relationships and “...includes its relations with public and private partners, position and brand image in networks, partnerships with the business sector and regional governments, links with non-profit organisations and communities and collaborations with national and international networks” (Secundo *et al.*, 2023, p. 1829-1830). Furthermore, a significant element in relational capital is represented by knowledge sharing with the internal and external environment (Lombardi, 2021). In the transition from the knowledge economy to the digital economy, the definition of enhanced intellectual capital emerges as the result of the components of intellectual capital integrated with smart and digital technologies (Trequattrini *et al.*, 2021).

Ramírez (2010) emphasizes the critical role that intellectual capital plays in the public sector. This is primarily due to the public sector’s emphasis on non-financial goals and its delivery of inherently intangible services (Dumay *et al.*, 2015). Consequently, the identification, evaluation, and management of these intangible elements are essential for ensuring effective PA. Therefore, a specific General Intellectual Capital Model for the public sector has been proposed, consisting of public human capital, structural and relational capital (Bueno Campos *et al.*, 2006). The relationships with media and corporate image refer to interactions with media outlets to enhance the organization’s popularity, reputation, and image. Building on the previous considerations, our research question (RQ) is the following:

RQ: *How does remote working influence intellectual capital, particularly relational capital, within the PA context?*

### 3 – Research method

A qualitative research approach was employed to achieve our aim. The qualitative research approach is “...the most appropriate and indeed the only way to achieve certain research objectives. Situations in which qualitative research is likely to be the preferred method include: 1) when there is limited knowledge about a research problem or opportunity; 2) when previous research only partially or incompletely addresses the research question; 3) when current knowledge involves subconscious, psychological, or cultural material that is not accessible using surveys and experiments; and 4) if the primary purpose of the research is to propose new ideas and hypotheses that can eventually be tested with quantitative research” (Hair *et al.*, 2003, p. 276). Qualitative methodology was considered the most appropriate approach for this investigation.

Specifically, a case study was conducted to achieve research aims (Yin, 2011). This method is widely used in business and management studies as it allows for the exploration of specific dynamics, identification of critical factors, and development of theories applicable to similar contexts. Moreover, the case study method allows for the integration of multiple sources of evidence including interviews, organizational documents and direct observation resulting in a holistic and in-depth understanding of the subject matter of study (Eisenhardt, 1989). In addition, the qualitative case study research approach is particularly valuable in exploring how

organizations adopt sustainability strategies and cope with issues of organizational change, thereby providing valuable insights that may be hard to obtain through other forms of research. The specific case concerns one municipality located in Italy.

### 3.1 – *Data*

Qualitative data were collected through semi-structured interviews to investigate the potential implications of remote working on the three dimensions of intellectual capital (relational, structural, and human). The interviews were conducted in Italian language, translated by the author, and thus have a margin of error. The selected sample comprised the municipal officers belonging to one entity in Italy, considered essential to gain a thorough understanding of the organisational dynamics under consideration. The interviews were conducted online, allowing greater participation flexibility while ensuring the participants' safety following current health regulations. Each interview lasted an average of 56 minutes, providing sufficient time to explore the perceptions and experiences regarding the changes introduced by remote work.

The interview questions were designed to address all three dimensions of intellectual capital, aiming to gather relevant data on how remote working has impacted internal and external relationships, organizational infrastructure, and the well-being and development of personnel. The collected data were recorded, transcribed, and analyzed using thematic coding methods to identify recurring patterns and significant insights. This analysis allowed us to gain valuable insights into the ways working from home influences organizational dynamics, enabling the identification of key areas for improvement and further development in managing intellectual capital.

## 4 – Findings and Discussion

### 4.1 – *Relational Capital*

Remote working seems to have impacted internal relationships within municipal administrations, influencing interactions between human resources assuming several functions and rules inside the organization. Many employees have reported improved internal relationships, which can be attributed to increased flexibility and a better work-life balance (Mignenan *et al.*, 2022; Mele *et al.*, 2023). Managing one's time autonomously appears to have reduced the stress associated with travelling and fostering a peaceful environment, conducive to reflection and focused work.

This quality-of-life improvement seems to have positively affected peer relationships (Sirgy and Lee, 2018). Reducing stress and enhancing work-life balance seems to have contributed to a more collaborative and empathetic work environment. Interviewees highlighted that remote working facilitated more thoughtful communication, leading to positive interactions and a greater willingness to listen to and support colleagues (Romanelli, 2024). One interviewee described how, despite physical distance, remote working seems to have promoted greater attention to the quality of communication and a deeper consideration of others' opinions, possibly resulting in respectful and productive relationships.

Furthermore, remote working appears to have prompted a reevaluation of hierarchical relationships. The increased autonomy granted to employees could have fostered a more collaborative and less formal work environment, promoting a culture of greater inclusivity and participation. This shift seems to have led many employees to feel more engaged and valued,



thereby increasing their motivation and job satisfaction. Some managers have adapted their management styles (Pianese *et al.* 2023), encouraging open communication and a support-oriented approach rather than direct control, thus facilitating a cohesive work atmosphere and enhanced cooperation within teams.

However, the introduction of remote working in PA seems to have had a significant impact on external relationships, particularly with citizens and other institutions. In municipal contexts, where direct interaction with the public is essential, the transition to remote work has posed certain challenges. Despite efforts to maintain efficient service delivery through digital channels, the transition posed some obstacles (Lombardi & Mangiarotti, 2019). The shift to some online services has encountered resistance from citizens accustomed to accessing these services in person. This resistance has slowed the adoption and effectiveness of remote working in certain areas. *“Not all citizens are ready to manage their needs through digital channels, and this has created some challenges in ensuring smooth service delivery”*, noted a municipal officer. This resistance appears to underscore the need for further efforts to guide citizens toward greater familiarity with new tools, thereby making the digital transition more seamless and inclusive.

Inter-institutional relations have also changed (Todisco *et al.*, 2023). In many areas, the need to collaborate with other entities has become more complex due to the reduction in physical meetings. Physical distance seems to have amplified coordination difficulties and slowed bureaucratic and decision-making processes, which rely heavily on informal communication and the building of personal relationships. As one interviewee observed, *“Now that in-person meetings are less frequent, it is more challenging to coordinate and collaborate”*. Physical distance in various contexts can exacerbate existing barriers and create additional challenges in inter-institutional cooperation. The reliance on virtual meetings has exposed some limitations of digital tools compared to face-to-face interactions, particularly when it comes to building trust and resolving conflicts between local entities (Palumbo *et al.*, 2024) (see Table 1).

## 4.2 – Structural Capital

The most evident change related to structural capital has been the increased use of video conferencing platforms, which have replaced in-person meetings and facilitated communication between employees and managers (Kraus *et al.*, 2023; Palumbo *et al.*, 2024). However no new tools or specific applications have been adopted to support remote work, thereby limiting the impact of remote working on existing digital infrastructures. This situation reflects a lack of significant investment in enhancing digital infrastructures (Hur *et al.*, 2019) and PA has continued to rely on pre-existing systems: *“We continued to work with what we had before the pandemic, without any major change”*, reported one employee, highlighting the absence of an effective strategy to adapt infrastructures to the new reality of remote work (Xanthopoulou *et al.*, 2023).

The transition to remote working required a revision of organizational processes, rethinking practices, work organization, document management and internal communication. *“Our procedures were designed for in-person work. With remote working, we had to rethink everything”*, explained one official, underscoring the need to adapt bureaucratic practices to new demands. It also appears that emphasis was placed on maintaining collaborative networks as working in different locations could undermine informal knowledge sharing.

One of the most discussed aspects emerging from the interviews was the shift from employee management based on physical supervision to a results-oriented approach (Pianese

*et al.* 2023). In many offices, this change required a rethinking of work monitoring and evaluation methods, as well as a greater degree of trust in staff. *"We can no longer monitor when and where employees work, so we focus on outcomes. This seems to have improved autonomy, but it also requires clear goal setting"*, stated a manager. This shift has highlighted the need for robust governance and well-defined processes to support structural capital.

The reorganization of processes has also led to the adoption of new forms of collaboration and communication. Tools such as video conferencing, instant messaging platforms, and project management systems have partially replaced in-person meetings and informal discussions. *"Now we do everything online, from meetings to projects. It's faster, but sometimes we miss the direct contact we had in the office"*, observed another employee, acknowledging the efficiency gains and recognizing human interaction limitations.

Additionally, data security concerns may limit remote work adoption, particularly for certain services, as safeguarding sensitive information becomes more challenging. Digital platforms can introduce vulnerabilities, requiring stronger cybersecurity measures. These risks highlight the need for secure digital infrastructures that not only protect data but also support collaboration and trust.

Structural and relational capital are deeply interconnected (Mignenan *et al.*, 2022). When developing digital infrastructure, fostering relationships through virtual spaces and knowledge-sharing tools is crucial. Investing in structural capital should go hand in hand with strengthening relational ties and trust, essential for a cohesive and collaborative work environment (see Table 1).

### 4.3 – Human Capital

With the introduction of remote working, employees had to adapt to new work modalities and demonstrate remarkable resilience in facing the challenges brought about by this changing situation. One of the most significant themes emerging from interviews is the importance of digital skills (Matikainen *et al.*, 2023). The adoption of new technologies exposed gaps in these skills, which in many cases were bridged only through a rapid learning process. *"I had never used the computer this much for work, but I had to learn quickly"*, stated one employee, highlighting how this experience accelerated the transformation of digital competencies within the public sector.

The acquisition of new skills included the use of digital tools and the ability to manage one's time and work independently (de Assis Dornelles *et al.*, 2022). Remote working demands greater individual responsibility, effective personal management, and self-motivation. *"Working from home, I had to learn to manage my time better. No supervisor was watching over me, so it all depended on me"*, shared another interviewee.

Training plays a crucial role in supporting human capital. PA initiated intensive programs to enhance digital skills and provide support in managing remote work. *"Training courses were conducted to learn how to use new tools. Employees responded positively, although a bit slower than expected"*, remarked a manager, demonstrating how investment in training was pivotal in facilitating adaptation.

Employee motivation and engagement are relevant issues (Palumbo *et al.*, 2024). The interviewed managers noted that remote working has had a positive influence on these aspects. In particular, the ability to self-manage time led to an increased sense of autonomy and responsibility among staff. With the freedom to organize their workday, employees felt more

motivated and demonstrated greater commitment to completing their tasks. This flexibility allowed them to achieve a better work-life balance, reducing stress and improving the quality of their work.

However, remote working would present some challenges in terms of knowledge sharing (Edward, 2022). Informal exchanges in the work context such as quick discussions and clarifications or sharing of best practices between supervisor and employee or between colleagues, become more complex in the context of remote working (Todisco *et al.*, 2023). Face-to-face work facilitates the sharing of knowledge to increase the skills of employees. With remote working, managers or supervisors should start thinking about measures to be able to replicate consolidated practices in face-to-face work also remotely (see Table 1).

## 5 – Conclusions, Research Limitations and Future Developments

This study aimed to investigate the influence of remote work on the intellectual capital of PA, focusing specifically on relational capital. To address our RQ: “*How does remote working influence intellectual capital, particularly relational capital, within the PA context?*”, we applied a qualitative methodology including case study, interviews and document analysis. This allowed us to achieve the primary objective of the paper.

The findings reveal that remote working has significantly influenced both relational and human capital by reshaping relationships, fostering trust, and enhancing autonomy, despite reduced physical interaction. Digital tools have improved communication efficiency and work-life balance, while continuous training has strengthened digital skills and boosted productivity (Dunleavy & Margetts, 2015; Hong *et al.*, 2022; Hur *et al.*, 2019). However, challenges remain for structural capital, particularly in adapting technological infrastructures and addressing resistance to digital processes, which hinder the full potential of remote work.

Our study offers both theoretical and practical implications. From a theoretical standpoint, this research enriches existing literature by shedding light on the crucial role of intellectual capital in a remote work environment (Dumay *et al.*, 2015; Lombardi, 2021; Sousa *et al.*, 2023). Specifically, the findings emphasize the complexities of managing intellectual capital when traditional face-to-face interactions are replaced by digital communication. While remote work can enhance flexibility and productivity, it also binds organizations to reevaluate how they manage and leverage their intellectual assets (Ceron *et al.*, 2021; Mele *et al.*, 2023). This study emphasizes the need for innovative strategies to sustain and foster relational capital in virtual environments, highlighting the requirement for different approaches to communication, trust-building, and collaboration in remote contexts (Pianese *et al.* 2023).

Furthermore, our study increases the understanding of factors that either facilitate or hinder the efficient use of intellectual capital in a smart working context (Di Giulio & Vecchi, 2023; Pass & Ridgway, 2022). It offers valuable guidance on how PA organizations can adapt to the changing dynamics of relational capital management, ensuring that the connections between employees remain strong despite physical distance (Bernier *et al.*, 2015). The theoretical insights contribute to a broader understanding of intellectual capital's role in remote work, particularly in PA (Berman *et al.*, 2024; Gagliardo *et al.*, 2024).

On a practical level, our study provides PA managers with useful insights that emphasize the significance of investing in digital tools and extensive training initiatives to facilitate remote work (Plesner & Justesen, 2022).

**Table 1 – Summary of main findings** (Source: Authors' elaboration)

Capital	Remote Working	Links to Capital	Implications
Relational	<b>Distance Collaboration</b> Maintaining social relationships	Remote working tests collaboration dynamics, reducing physical interaction and increasing the need for digital tools.	Despite reduced physical interaction, relationships seem to have improved due to better quality of work-life balance.
	<b>Digital Communication</b> Tools for effective communication	The shift to digital communication creates a reliance on online platforms, requiring proper adoption to maintain relationship fluidity.	Adoption of digital tools has been well-received, improving communication and reducing time lost in commuting.
	<b>Support and Trust</b> Remote supervision and autonomy	Trust becomes crucial in remote working. Employees need to feel supported and have the freedom to work autonomously.	Remote working has strengthened trust and autonomy, with positive effects on work relationships.
Structural	<b>Technological Infrastructures</b> Access to digital tools and internet	Remote working heavily depends on IT infrastructures. The quality and accessibility of technological tools directly influence the effectiveness of remote work.	No investments in technological infrastructure have been made by the PA
	<b>Digital Processes and Procedures</b> Automation and standardization	The need to digitize and automate processes increases with remote working. This can make the public administration more agile.	Slowdown due to resistance from citizens
	<b>Security and Privacy</b> Managing sensitive data remotely	Remote working raises concerns regarding data security and privacy.	Data security has been a concern, but adequate protocols have been adopted, mitigating risks.
Human	<b>Digital Skills</b> Adaptability to new technologies	Remote working requires a high level of digital skills, and the ability to quickly adapt to technological changes is crucial.	Digital skills have improved through continuous training, increasing productivity.
	<b>Well-being and Motivation</b> Managing stress and isolation	Remote working can negatively impact employees' psychological well-being and motivation.	Well-being has improved for many, thanks to greater flexibility and reduced commuting stress.
	<b>Autonomy and Responsibility</b> Managing work independently	Remote working increases the need for autonomy and personal responsibility.	Autonomy in remote work has fostered a greater sense of responsibility and led to improved productivity.

Organizations may increase employee engagement, improve teamwork, and promote more efficient information exchange among staff members by providing them with the required technology skills and tools (Faber *et al.*, 2020; Mignenan *et al.*, 2022). Furthermore, the results indicate that companies should give the greatest importance to strategies that improve communication and trust amongst remote workers to maintain the continuous flow of

information and strengthen relationships between them (Pianese *et al.* 2023). By addressing these issues, PA organizations will be able to enhance collaboration, trust, and overall organizational efficacy in the digital era, setting them up for long-term success in a setting that is becoming increasingly virtual.

However, this study presents some *limitations*. The research was conducted within a specific PA, which limits the ability to generalize the findings to other PAs or sectors, as well as to different geographical regions (Parker & Northcott, 2016). Moreover, the quality of the investigation does not allow for a quantitative assessment of the impact of remote working on intellectual capital, even though it allows for in-depth insights. Future research could address these limitations by expanding the case studies to encompass a broader range of perspectives, such as organizational size, geographical regions, and types of organizations. Additionally, future studies could adopt a mixed-methods approach to provide both the qualitative and quantitative dimensions of the phenomenon, allowing for more complex knowledge to emerge. Furthermore, longitudinal studies could be valuable in assessing the long-term effects of remote working on intellectual capital, particularly as organizations continue to adapt to evolving work environments. In studying the synergies between relational capital and the other two capitals, future studies could use quantitative methods to evaluate and measure the potential influences highlighted in the contribution.

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