

**EVERYONE, EVERYWHERE, ALL AT ONCE: A MIXED-METHOD
APPROACH ABOUT THE USE OF WHATSAPP FOR WORK PURPOSES.**

by

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Abstract

Digital transformation describes how work processes change when integrating Information and Communication Technologies. WhatsApp, the instant messaging application, is being used in a more dynamic and interconnected workplace, changing internal communications. Yet, little is known about WhatsApp use for work purposes or its effects on public servants. Thus, this dissertation studied how public servants respond to digital transformation. I employed a sequential mixed methods approach (qualitative-driven) in the Municipality of Palmira (Colombia).

Chapter 2 conducted in-depth interviews with public servants to analyze the use of WhatsApp and their coping mechanisms. Results showed discrepancies when using WhatsApp, mediated by their work experience, type of contract, job responsibilities, and age. Also, WhatsApp favors more agile work when collaborating and dilutes hierarchical boundaries, but it contributes to depersonalizing workplace relationships and facilitates a culture of immediacy and urgency.

Chapter 3 conducted in-depth interviews to analyze public managers' use of WhatsApp as a managerial tool for internal processes. Results showed that despite being widely used among public managers, questions remained about its formal or informal status, having accountability implications. However, managers value WhatsApp as an essential tool for improving performance and increasing productivity.

Chapter 4 employed an experiment embedded in a survey to analyze how public servants were affected when using WhatsApp for work purposes. Through a simple but realistic hypothetical two-scenario experiment, public employees are more stressed about

using WhatsApp if they know their information has yet to be stored according to formal regulations, signaling that WhatsApp is a source of stress when used for work purposes. These results show that with new tools like WhatsApp, public employees prefer to comply with the established rules, avoiding ambiguity and possible accountability misunderstandings.

Public organizations are experiencing an informal formalization of WhatsApp, but doubts concerning its official outreach remain. Public servants expressed an adversarial and complementary relationship between WhatsApp and emails (an accepted formal tool) to keep track of their records. When using new tools like WhatsApp, public servants prefer to comply with the established rules, avoiding ambiguity. Hence, more precise guidelines are needed for using WhatsApp, especially in an era of virtual interactions.

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stages of this dissertation; their time and commitment to responding to my questions were fundamental; these pages are because of them. Also, I am thankful to the 2020 APSA – Paul Volcker Junior Research Award, Rutgers Global International Collaborative Research Grant (Principal Investigator: Gregory Porumbescu), and SPAA dissertation funds for their funding that facilitated the data collection and information processing.

Finally, it may seem redundant, but I must highlight my gratitude to all of you, I admire you all. I am grateful to not only the people I just mentioned in these lines but also their families and related friends that, somehow, I have interacted with these past few years. Be sure that all of you added value to my process, and I am thankful for that. I also apologize if I did not mention some of you. If I did not include you, it is my mistake; the excitement and mixed feelings of seeing the finish line probably have altered my writing of these lines.

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1. Introduction

1. Background

Information and Communication Technologies (ICTs) are essential organizational elements (Brown et al., 2014; Ahn, 2011). As expected, integrating new ICTs into the workplace has altered work processes in public organizations, providing a more dynamic and interconnected workplace (Feldman et al., 2019). Scholarship refers to transforming organizational processes when integrating ICTs as digital transformation (Eom & Lee, 2022; Mergel et al., 2019). Thus, these changes in internal organizational dynamics when integrating ICTs need further analysis (Mergel, 2013; Ingrams, 2015; Eom & Lee, 2022; Goldfinch et al., 2011). For example, technologies such as instant messaging applications helped navigate the COVID-19 challenges while introducing new work arrangements characterized by virtual interactions.

Communication barriers are disappearing because of the integration of ICTs (Fusi & Zhang, 2020). In particular, WhatsApp (an instant messaging application) has altered internal communications because it makes it easier to transmit information (Giurge & Bohns, 2021). Moreover, WhatsApp is used for work purposes despite not being formalized in many workplaces (Rajendran et al., 2019). This adds another tool to a workplace environment already saturated with multiple forms of communication (Garrett & Danziger, 2007). Yet, little is known about WhatsApp use in the public workplace.

ICTs could produce positive and negative effects on employees' perceptions (Diaz et al., 2012; Benlian, 2020; Roman, 2015). The integration of new technologies into the workplace creates pressure on public servants to act accordingly, even if they are

unprepared to use them (Camarena & Fusi, 2022). Their attitudes could reflect coping mechanisms, meaning that they are changing their attitudes and behaviors in a way that can tolerate the effect of the daily pressures they receive from using these technologies (Breit et al., 2021). In sum, scholarship still needs to understand better how public employees internalize digital transformation (Mergel et al., 2019).

Additionally, digital transformation also affects transparency and accountability processes. This is a particular aspect that needs further investigation. For instance, employees can change their behaviors to avoid the increased monitoring and process visibility that comes with more transparency (Bernstein, 2017; Liston-Heyes & Juillet, 2020), resulting in less discretion (Buffat, 2015) or even blame avoidance behaviors (Hood, 2011). Also, scholarship has understudied organizational and behavioral factors determining transparency implementation (Arellano-Gault & Lepore, 2011). Thus, WhatsApp adds a new mechanism public employees need to consider when pursuing transparency and accountability in the workplace.

Considering the context of WhatsApp use in government settings, this dissertation responds to the broad question: How do public servants respond to digital transformation in the workplace? This dissertation studies the use of WhatsApp for work-related purposes among public servants and the relationships between them. This is important because these new work arrangements permeate day-to-day work relations, despite being initially introduced as informal interactions, suggesting profound implications for human resource administration. I used a sequential mixed methods approach to study a specific case in the less explored Latin American public sector organizations: the Municipality of Palmira (Colombia). Specifically, I used a qualitative-driven approach where Chapters 2

and 3 correspond to the qualitative phase, whereas Chapter 4 discussed the quantitative findings.

In particular, Chapter 2 seeks to understand public servants' coping mechanisms for using WhatsApp for internal processes by responding to the question: How are public servants integrating WhatsApp into internal work processes? Specifically, this chapter employs a qualitative approach (in-depth semi-structured interviews) to revise the general coping mechanisms that public servants in Palmira (Colombia) show when using WhatsApp for work purposes. Chapter 3 analyses public managers' adaptation processes to the new work dynamics when using WhatsApp for work purposes. It responds to the question: How are public managers using WhatsApp as a managerial tool for internal processes? Scholarship still needs to study how new technologies affect managers (Feeney & Welch, 2016). The evolving nature of ICTs could require strong adaptive attitudes from organizational leaders (Roman et al., 2018). This chapter also uses a qualitative approach (in-depth semi-structured interviews) to collect data from top officials in Palmira (Colombia).

Chapter 4 recognizes that using new ICTs that have not been well-regulated (like WhatsApp) can affect employees' behaviors. Thus, these difficulties that come from digital transformation processes, which are also related to the formalization processes of the new technologies, could also be triggering public servants' stress. This chapter is built after analyzing the findings from Chapters 2 and 3. I use a quantitative approach to answer the question: How are public servants affected when using WhatsApp for work purposes? Lastly, Chapter 5 will highlight the most important findings and make some

concluding remarks, including suggestions for expanding this research and policy implications.

2. Methodological approach

This dissertation aimed to understand the “how’s” of a specific phenomenon; thus, conducting a case study seemed appropriate to achieve the research objectives (Yin, 2018). Case studies could be a good approach when studying contemporary phenomena, permitting a deeper analysis of them, unlike other methods (Yin, 2018; Creswell & Poth, 2018). This dissertation studied a single-case: the Municipality of Palmira (Colombia). Similarly, to have a better understanding of the “common case,” which is using WhatsApp for work purposes, the case study is embedded in a mixed-methods approach. Mixed methods in case studies facilitate engaging in broader and more complicated research questions (Nowell & Albrecht, 2019; Creswell & Poth, 2018; Yin, 2018; Creswell & Plano Clark, 2018). This way, my results add to contemporary theoretical concepts relevant to public administration.

This dissertation used a mixed-methods approach. I refer to mixed methods as those approaches that include at least one quantitative and one qualitative method in the same project (Mele & Belardinelli, 2019; Creswell & Plano Clark, 2018). These methods can follow a sequential approach, meaning that the study is divided into phases, where the results of the first phase are the input of the second one. The sequential approaches can be of two kinds: qualitative-driven (exploratory sequential design) or quantitative-driven (explanatory sequential design) (Mele & Belardinelli, 2019; Hendren et al., 2023; Rodriguez, et al., 2015; Creswell & Plano Clark, 2018). Here, the quantitative-driven

approach has dominated the mixed methods literature in the discipline (Hendren et al., 2023).

This dissertation followed a qualitative-driven or exploratory sequential design. This approach characterizes by starting with a qualitative approach in the first phase and then using the results to inform/design the second quantitative phase (Mele & Belardinelli, 2019; Rodriguez, et al., 2015; Creswell & Plano Clark, 2018). This approach can be time-consuming because the second phase should not begin until the first phase is finished (Creswell & Plano Clark, 2018). Perhaps, this is one reason why in recent years, studies using mixed methods have increased; however, the qualitative-driven approach has decreased in proportion to the quantitative-driven counterpart (Hendren et al., 2023).

3. Case study: Palmira (Colombia)

Colombia, an approximately 50-million inhabitant South American country, has had a stable democracy despite the presence of guerilla¹, paramilitary groups, and other illegal actors (drug dealers) that have threatened public institutions and co-opted them on more than one occasion (Langbein & Sanabria-Pulido, 2013). Colombia enacted its new Constitution in 1991, addressing both New Public Management ideas (Ramírez & Isaza, 2020), and the merit principle for the public service at national and subnational governments (Sanabria-Pulido et al., 2019). The new Constitution aimed to decentralize local governments' processes more while looking at having an effective, flexible, and professional civil service (Ramírez & Isaza, 2020). Under the new Constitution, local governments have administrative and fiscal autonomy for various policy areas. However,

¹ In 2016, the Colombian government and the most prominent rebel group signed a peace treaty that ended a 50-year armed conflict. Nevertheless, there is still the presence of other rebel groups.

the coexistence of greater governmental responsibilities, decentralization processes, and New Public Management practices have brought implementation and management difficulties for public managers, especially at the local level.

Colombia experienced an economic crisis at the end of the XX century, forcing several fiscal and administrative adjustments that froze public servants' recruitment while hiring contractors gained relevance in the public sector (Londoño et al., 2018; Sanabria-Pulido et al., 2019). These reforms had an economic purpose but hampered the civil service. Unfortunately, due to the disproportionate number of contractors, there is no possibility of estimating the true size of the Colombian government (Sanabria-Pulido, 2015). Today, Colombian public organizations have to balance the coexistence of contractors and careerists with similar job descriptions. Yet, both types of employees operate under different contractual regimes, making human resources administration more complicated.

From a legal and procedural perspective, Colombian institutions are working to be more transparent and accountable. For instance, the Colombian Constitution has different articles related to civic engagement and accountability (Departamento Nacional de Planeación, 2010). Similarly, the Supreme Constitutional Court has also ruled that public organizations must act transparent and be accountable to the citizens. Finally, different laws and decrees have targeted the development of e-government and open government and the use of ICTs (Departamento Nacional de Planeación, 2010).

For instance, the Colombian government developed in 2010 a national accountability policy for the public sector (Departamento Nacional de Planeación, 2010), aiming to increase transparency, responsibility, and accountability of public organizations. The Colombian e-government strategy promotes the use of ICTs to

increase accountability. Public organizations should use social media, text messages, among other tools, to engage with citizens (Ministerio de las TIC). The latest administrative reforms in the country have aimed to have more professional, transparent, and citizen-oriented public servants (OECD, 2013). When compared to other countries in the region, Colombia seems to lead e-government practices (OECD, 2018, 2019), though there are still significant gaps in local governments' development.

The COVID-19 pandemic forced public organizations to work from home while assuring the proper service provision (Presidencia de la República, 2020). Because of that, public organizations had to make public, on their websites, what channels they will use to engage with citizens. Remote work meant heavy use of ICTs for public servants. In this scenario, the Colombian Department of Civil Service recommended that public servants use WhatsApp (or any other ICT tool) that their supervisors considered appropriate to work during work hours (Función Pública, 2020). Recent rulings from the Colombian Supreme Courts have permitted WhatsApp messages to be included in legal processes when WhatsApp is used for work purposes, giving the instant messaging application an official status (López-González, 2021). Finally, Colombia enacted a "Disconnection Law" in 2022 (Law 2191 of 2022) that delimited work-life balance by permitting public servants, depending on their responsibilities, not to be reached after work hours.

A recent survey of public servants regarding the work-from-home experience during COVID-19 (Schuster & Mayo, 2021) concluded that at least 90% of respondents would like to work remotely at least one day a week. Also, about 70% perceived that they properly use ICTs for collaborative work. Finally, about two-thirds of respondents

positively perceive their leaders when managing remote teams. Similarly, the 2018 LatinBarometer survey determined that in Colombia, 67% of people use WhatsApp.

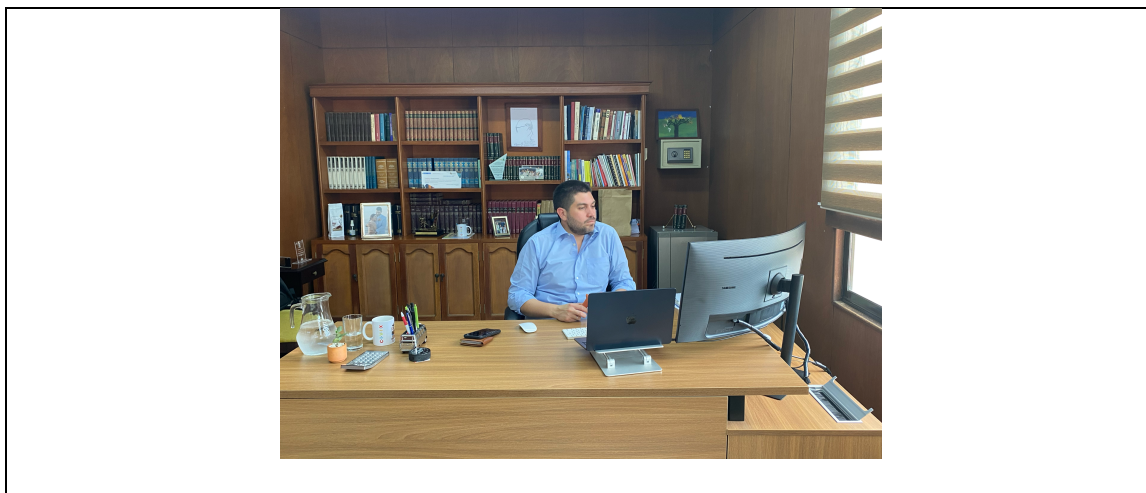
Colombia's institutions give broad discretion to elected officials to appoint their executive leaders. Hence, compared to other OECD members, Colombia is one of the countries with more executive leaders' turnover when a new government takes office (Vargas, 2018). At the local level, Colombia's political system determines local elections every four years, and reelection is prohibited. Therefore, new governments start their term every four years on 01/01, two months after the elections. It is expected that during those two months, there must be a transition process between the current and the newly elected government.

In October 2019, in the city of Palmira, an independent candidate defeated the incumbent's successor by a short margin (less than 5% difference). It represented a significant shift for Palmira because the same party had ruled it for over a decade. Despite not having a smooth transition, the new Mayor has tried to develop his vision to take the city through a "new path." Simultaneously, the new government had had to deal with the COVID-19 pandemic (the crisis hit when they were just three months into office). And most recently, the civil unrests and protests that spread throughout Colombia in 04/2021 have put enormous pressure on local authorities to accelerate substantial social changes.

Mayor Óscar Escobar is in his early 30s, with work experience in the national and local governments and Congress. Before running for Palmira's Municipality, Oscar served as Information and Communication Technologies director in the city of Cali (the third largest city in Colombia). During his campaign, he proposed a transparent and

modern city where open government initiatives would be prioritized by using innovative and multiple technological tools that could bridge citizens and public servants (Programa de Gobierno, 2020-2023). In this matter, Mayor Óscar Escobar is passionate about using technology and encourages his team to use it as well. Photograph 1.1. shows the different technological tools Mayor Óscar Escobar uses daily.

Photograph 1.1. Technological tools Mayor Óscar Escobar uses daily at his office



*Mayor Óscar Escobar attending a virtual meeting (09/2022). Two screens and a smartphone are visible (not visible: earphones).

Palmira is a medium-sized city with approximately 350,000 inhabitants (the 20th largest city in Colombia). Mayor Óscar Escobar is the president of the newly-created Association of Medium-Sized Municipalities, which could represent 65 Colombian municipalities, representing 28% of Colombian population (Asointermedias, 2022). Additionally, the city is a member of the Peace in Our Cities Network; it also won the 2022 UCLG Peace Prize. Recently, the Mayor participated in the first Cities Summit of the Americas in April 2023 (Office of Cooperation, 2023).

According to city officials (Alcaldía de Palmira, 2020), Palmira is a city located southwest of Colombia, belonging to the Valle del Cauca region (*departamento*). Its urban area is divided into seven boroughs, while its rural area has eight. Palmira's latest

administrative reform (from 2016) established that the city would have 43 top managerial positions: 15 secretaries, 20 deputy secretaries, and eight "offices" directly accountable to the mayor's Office. Additionally, Palmira has six decentralized units (they have administrative, legal, and budgetary autonomy). As Table 1.1. describes, Palmira's administrative structure consists of heavy-policy-oriented units while others are more oriented to management and internal operations. As expected, some units are more connected to citizens than others, making some managers more visible to the public than others.

Table 1.1. Palmira's Administrative structure

Office	Subdivision
Mayor's Office	Office of Internal Disciplinary Control
	Office of Communications
	Office of Technology, Innovation and Science
	Office of Public Procurement
	Office of entrepreneurship and business development
	Office of Disaster Risk Management
	Office of Environmental Management
	Internal Control Office*
Secretary for General Affairs	
Secretary for Legal Affairs	
Secretary of Finance	Deputy Secretary of Coercive Collection
	Deputy Financial Secretary
	Deputy Secretary of Income and Treasury
Secretary for Governmental Affairs	Deputy Secretary of Regulation Enforcement
Secretary of Security and Peaceful Coexistence	
Secretary of Planning	Deputy Secretary of Territorial Planning
	Deputy Secretary of Socioeconomic and Strategic Planning
Secretary of Institutional Development	Deputy Secretary of Human Resource Management

Office	Subdivision
	Deputy Secretary of Physical Resources and General Services Management
Secretary of Culture	
Secretary of Community Participation	
Secretary of Infrastructure, Urban Renewal and Housing	Deputy Secretary of Urban Renewal and Housing Deputy Secretary of Infrastructure and Valorization
Secretary of Health	Deputy Secretary of Planning and Management Deputy Secretary of Public Health
Secretary of Education	Deputy Secretary of Education Coverage Deputy Secretary of Education Quality Deputy Secretary of Administrative and Financial Affairs
Secretary of Agricultural and Rural Development	Deputy Secretary of Rural Promotion and Post-Conflict
Secretary of Social Integration	Deputy Secretary of Childhood, Adolescence, and Youth Deputy Secretary of Development and Social Inclusion
Secretary of Transit and Transportation	Deputy Secretary of Road Safety and Registration Deputy Secretary of Strategic Mobility Development
Decentralized Units	Hospital "Raúl Orejuela Bueno" ** IMDER (Sports and Recreations Institute) ** Aqueduct ** CORFEPALMIRA (Corporation of events, festivals and shows) ** IMDESEPAL (Municipal Institute for Social and Economic Development of Palmira) ** Automotive Diagnostic Center **

*Not Appointed by Mayor

**Appointed through a board where Municipal Government has majority

Similarly, Palmira’s workforce, as of June 2021, consisted of 1,166 employees divided into 508 public servants, 51 freely appointed officials, and approximately 607 contractors (see Table 1.2.). It is relevant to notice that some specific positions (mostly advisors) are also freely appointed by the Mayor, reflecting a difference between the number of freely appointed officials and the number of managerial positions.

Table 1.2. Palmira’s public workforce

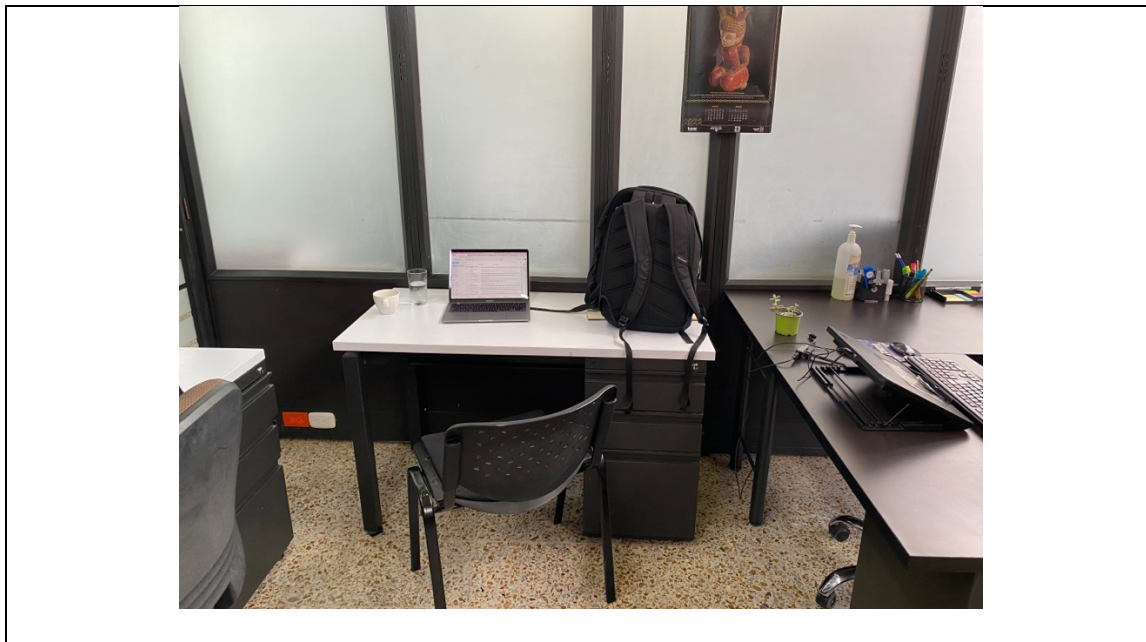
Category	Frequency
Career Public Servants (As of 06\2021)	508
<i>Female</i>	234 (46%)
Clerical	65
Technician	48
Professional	121
<i>Male</i>	274 (54%)
Clerical	61
Technician	82
Professional	131
Freely Appointed Officials (As of 06\2021)	51
<i>Female</i>	27 (53%)
Advisor	5
Directive	22
<i>Male</i>	24 (47%)
Advisor	1
Directive	20
Professional	3
Contractors (As of 08/23/2021)	607
<i>Female</i>	298 (49%)
<i>Male</i>	309 (51%)
Total Public Employees	1166

1. Vacant positions: 12 careerists.
2. There are also 49 *Official Workers* (public utility workers under a particular contract not considered in the study).
3. Data limitations do not allow to differentiate contractors by job position.

4. Data Collection process

Local authorities authorized me to start collecting data on top officials in January 2022. In this matter, they introduced me to a contractor from the Office of Cooperation that worked as a liaison in-situ (facilitator). This person helped me schedule the data collection procedures and any other requirements I would face. Later, Palmira authorities issued a second authorization to collect the remaining data in June 2022 (the remaining interviews and quantitative collection). I visited Palmira in the Summer and Winter of 2022 and the Spring of 2023. Thanks to the liaison, they provided me with a workstation where I could work during my time there (see Photograph 1.2.). Finally, while collecting the quantitative data, authorities authorized a different person to act as a facilitator. This person contacted public servants virtually and in person and invited them to participate in the study.

Photograph 1.2. Workstation during data collection



*Workstation located on the eighth floor, at the Secretary for General Affairs.

Finally, data collection and information processing funds were possible thanks to the 2020 APSA – Paul Volcker Junior Research Award, Rutgers Global International

Collaborative Research Grant (Principal Investigator: Gregory Porumbescu), and SPAA dissertation funds.

2. Using WhatsApp for work purposes in public organizations: A public servants perspective

1. Introduction

Integrating Information and Communication Technologies (ICTs) into the workplace has altered work processes in public organizations. Recently, these technologies' rapid development helped navigate the COVID-19 challenges while introducing new work arrangements characterized by virtual interactions. Scholarship refers to digital transformation as transforming organizational processes when integrating ICTs (Eom & Lee, 2022; Mergel et al., 2019). It is clear that public organizations have changed their internal dynamics in recent years; thus, scholarship still needs to revise the implications of pursuing this digital transformation (Mergel, 2013; Ingrams, 2015; Eom & Lee, 2022; Goldfinch et al., 2011).

Communication barriers are disappearing because of the integration of ICTs (Fusi & Zhang, 2020). In particular, a highly used tool is WhatsApp, which is the most popular social media instant messaging application, except in North America (Fernández-Ardévol & Rosales, 2017). Public servants are using this tool for internal collaborations, and its popularity for work purposes skyrocketed during the COVID-19 pandemic across the board. Yet, scholarship still needs to understand better how public employees internalize digital transformation (Mergel et al., 2019).

Considering the context of WhatsApp use in government settings, this study addresses the question: How are public servants integrating WhatsApp into internal work processes? The integration of new technologies into the workplace creates pressure on

public servants to act accordingly (Camarena & Fusi, 2022). Their attitudes could reflect coping mechanisms, meaning that they are changing their attitudes and behaviors in a way that can tolerate the effect of the daily pressures they receive from using these technologies (Breit et al., 2021). Additionally, digital transformation also affects transparency and accountability processes. For instance, employees can change their behaviors to avoid the increased monitoring and process visibility that comes with more transparency (Bernstein, 2017; Liston-Heyes & Juillet, 2020), resulting in less discretion (Buffat, 2015) or even blame avoidance behaviors (Hood, 2011).

The following study seeks to understand public servants' coping mechanisms when using WhatsApp for internal processes. It begins by discussing the research on digital transformation, internal communications, and WhatsApp use in organizational contexts. It will then describe the local context and the methodological approach to respond to the research question presented above. Next, it will present the findings from the qualitative approach and provide an overall perspective on how public servants use WhatsApp in the workplace, revising organizational and individual implications of these internal dynamics. Finally, the study will highlight the most important findings and make some concluding remarks, including suggestions for expanding this research.

2. Theoretical framework

2.1. Information and Communication Technologies change organizations.

Information and Communication Technologies (ICTs) are constantly evolving (Ragu-Nathan et al., 2008) and shaping social arrangements (Mergel & Bretschneider, 2013; Mergel et al., 2019). They could behave differently across different contexts (Leaning, 2006). As expected, bringing these ICTs into the workplace has represented a

paradigm shift (Ahn, 2011; Brown et al., 2014), which organizations cannot avoid (Becker et al., 2021). For instance, the rapid development of ICTs contributed to overcoming the COVID-19 challenges and created new workplace interactions (Eom & Lee, 2022; Chansukree et al., 2022) like remote work and virtual interactions. Thus, scholarship still needs to revise the effects of integrating ICTs into the workplace (Mergel, 2013; Ingrams, 2015; Eom & Lee, 2022; Goldfinch et al., 2011), especially in relation to the most recent technologies, such as social media and instant messages applications.

From an organizational perspective, scholarship has defined digital transformation as transforming organizational processes by integrating ICTs into them (Eom & Lee, 2022; Mergel et al., 2019). In this scenario, evidence has found that organizational culture affects ICTs adoption (Christensen & Lægreid, 2020; Fusi & Feeney, 2018; Zhang & Feeney, 2020; Schlagwein & Prasarnphanich, 2011; Welch & Feeney, 2014; Mergel, 2013). More importantly, adopting ICTs is challenging and does not guarantee organizational success (Bromberg & Manoharan, 2015; Feeney & Welch, 2016; Welch & Feeney, 2014; Thatcher et al., 2006). Scholarship needs to understand better what affects this digital transformation (Eom & Lee, 2022), especially in the public sector, which tends to adopt these technologies slower (Thatcher et al., 2006).

Undoubtedly, digital transformation is changing the work environment (Ragunathan et al., 2008; Atanasoff & Venable, 2017; Fusi & Zhang, 2020). In this scenario, an important aspect of the analysis is how ICTs affect internal communications, which refer to all formal and informal interactions that occur within the organization (Suh & Battaglio, 2021; Zainun et al., 2020). It is important to note that these internal

communications tend to transmit formal information while promoting centralization, rule-complying, and formalization (Suh & Battaglio, 2021). But, ICTs favor easier and faster information sharing (Giurge & Bohns, 2021). For instance, the new tools may facilitate an “informal formalization” of communications, where the informality that characterizes the new tool (e.g., emails) is used in a formal matter in the workplace (Meijer, 2008). It is expected that the newest communication tools, such as WhatsApp, will show similar behaviors.

Digital transformation affects bureaucratic characteristics, facilitating the transition into a polycentric organization where real-life interactions occur between members at all levels (Meijer et al., 2023), or as Meijer (2008) suggested: a hierarchical horizontalization. Communication barriers are disappearing because of the integration of ICTs (Fusi & Zhang, 2020). For instance, using instant messages facilitate multiple-simultaneous conversations in the workplace (Garrett & Danziger, 2007; Ragu-Nathan et al., 2008), or WhatsApp’s group chats are used to exchange information and collaborate between different people around the same topic (Meijer et al., 2023). In sum, digital transformation is not optional (Eom & Lee, 2022).

At the individual level, public servants must manage these technologies despite not being prepared to use them (Camarena & Fusi, 2022). Knowing that the introduction of the new technology could affect employees' discretion and autonomy (Breit et al., 2021), they cope, meaning that they are changing their attitudes and behaviors in a way that can tolerate the effect of the daily pressures they receive from using these technologies (Breit et al., 2021). From a study of front-line workers' digital interactions with citizens (or “clients”), Tummers and Rocco (2015) identified three distinctive coping

behaviors: public servants can help the clients, move away from the clients, or move against the clients. Their analysis concluded that public servants tend to “help clients” as a coping mechanism for the stress generated by ICTs. However, little is known about the coping mechanisms of using ICTs for internal processes, which could also cause stress (Camarena & Fusi, 2022). Overall, scholarship still needs to understand better how public employees internalize digital transformation (Mergel et al., 2019), especially when these new technologies could shape new workplace skills that employees need to develop, such as communication and teamwork (Nograšek & Vintar, 2014).

Technology itself does not cause digital transformations (Mergel et al., 2019), and digital transformation does not mean that technology will be used “as is” in the workplace (Ragu-Nathan et al., 2008). In this context, literature has studied how ICTs have been integrated into workplace processes, especially when specific contexts determine these appropriations (Leaning, 2006). First, when revising the evolution of technology (from a general perspective), Grodal and colleagues (2023) suggest that there is a continuous incremental change that is interrupted by occasional disruptive changes. The authors comment that in the beginning, people can observe a low performance after the disruptive interruption, but once the technology crosses a threshold (mediated by investments and learning), it matures. Eventually, the new technology becomes the new normal. Similarly, Gong and colleagues (2020) concluded that digital transformation spreads in waves, but they adapt to different organizational contexts. From this approach, we can infer that the COVID-19 pandemic represented a disruption in introducing new technology into the workplace.

When revising digital transformation in the public sector, Ines Mergel and Stuart Bretschneider (2013) proposed a bottom-up framework for ICTs adoption, especially concerning the use of social media in the workplace. The authors developed a three-stage model, somewhat similar to the approaches previously described. In short, the first stage describes individuals (“intrapreneurs”) that bring new technology into the workplace because they have used it for their private benefits (for example, employees use social media for their private interests as well [Chansukree et al., 2022]). The second stage suggests chaos in the workplace because the more general use of the new technology comes with informal rules for using it, and there is no consensus about it. The second stage also involves organizational leaders who call for formalization procedures. Finally, the third stage describes a new status quo because the new technology has been institutionalized (clear rules and procedures).

The bottom-up model (Mergel & Bretschneider, 2013) does not describe the reasons why the specific technology is being adopted nor the implications on employees’ attitudes. This is important because employees use these technologies in specific institutional contexts, affecting workplace interactions (Meijer, 2008). For example, in a previous study, Lee (2008) found that ICTs adoption was mediated by the relative power within the hierarchy, the author concluded that at early stages, lower ranks would use the new technology, but appropriation by higher levels in the hierarchy was influenced by their capacity to understand and manage the new technology. The disruption caused by the COVID-19 pandemic could have accelerated the appropriation of new technologies, blurring the distinction between the stages and hierarchical approaches.

At the individual level, the appropriation of new technologies facilitates work to be more dynamic and interconnected (Feldman et al., 2019). However, ICTs appropriation could also generate stress among public employees (Camarena & Fusi, 2022). The possibility of being connected to the office anywhere at any time (especially by white-collar employees [Pflügner et al., 2021]) is blurring the distinction between work and home, and scholars have just begun to study these implications (Benlian, 2020). This situation could represent work overload, multitasking, work-life spillover effects, and job dissatisfaction (Camarena & Fusi, 2022). Additionally, most of these studies have concentrated on the private sector (Camarena & Fusi, 2022). For instance, due to the COVID-19 pandemic, research is needed on the implications of remote work and work-life balance (Palumbo, 2020).

2.2. Instant message tool: WhatsApp

Social media use in the workplace is increasing (Fusi & Feeney, 2018; Fusi & Zhang, 2020; Schlagwein & Prasarnphanich, 2011) because it makes easier the transmission of information (Feeney & Welch, 2016; Oliveira & Welch, 2013; Zheng & Zheng, 2014). Public organizations are using social media applications because they allow interactions through two-way communication (Fusi & Zhang, 2020; Hofmann et al., 2013; Nduhura & Prieler, 2017; Oliveira & Welch, 2013) and they are free (Fusi & Feeney, 2018). More importantly, social media facilitates a bottom-up appropriation of ICTs because everyone can use them despite the hierarchical position (Feeney & Welch, 2016; Fusi & Feeney, 2018; Porumbescu, 2017).

Instant message applications (like WhatsApp, WeChat, KaKaoTalk, Line, or Google Hangout) are social media applications that can be used for internal collaboration

(Cameron & Webster, 2005; Rajendran et al., 2019). Instant messages allow short-text near-synchronous communication between employees while announcing who is available at the moment (Cameron & Webster, 2005; Garrett & Danziger, 2007; Lebbon & Sigurjónsson, 2016). In short, instant messages are another communication medium that adds to an environment already saturated with information and interactions (Garrett & Danziger, 2007).

Instant messages permit constant connectivity to office responsibilities without being physically present (Sonnetag, 2018; Bittman et al., 2009). In this scenario, “real-time” interactions facilitate immediate responses (Rajendran et al., 2019; Shih-Ming et al., 2008; Giurge & Bohns, 2021). They also allow multiple interactions simultaneously, facilitating multitasking (Sonnetag, 2018), yet, they could also increase work interruptions (Rajendran et al., 2019; Ter Hoeven et al., 2016).

Instant message tools have not been formalized in the workplace, but employees use them anyway (Rajendran et al., 2019). One shortcoming of using these tools is related to the difficulty of securing and storing official information (Cameron & Webster, 2005). However, employees prefer them because the synchronous nature could be more effective in some situations than other tools like emails (Rajendran et al., 2019). Instant messages in the workplace could complement or compete with work emails (Rajendran et al., 2019). Yet, emails could be preferred because of their asynchronous nature (Rosen et al., 2019; Giurge & Bohns, 2021; Brown et al., 2014; Byron, 2008). In addition, employees could prefer a paper trail for accountability purposes despite the benefits of instant messaging (Cameron & Webster, 2005), and emails could provide this security. For

instance, when using WhatsApp, people are concerned about losing information in cases where the smartphone crashes or is stolen (Meyer et al., 2021).

WhatsApp is the most popular instant message tool (Fernández-Ardévol & Rosales, 2017; Terkan & Celebi, 2020; WhatsApp blog, 2022). WhatsApp's popularity is worldwide, except in North America (Fernández-Ardévol & Rosales, 2017). This tool only requires that the device is connected to the internet or to a data plan (Meyer et al., 2021; Montag et al., 2015; O'Hara et al., 2014; Sun, 2020). It permits the real-time interchange of messages (text, video, or audio) to individuals and groups (Church, & de Oliveira, 2013; Meyer et al., 2021; Nobre et al., 2020; Montag et al., 2015). More importantly, it offers end-to-end encryption and protected backup to its users (WhatsApp blog, 2022). Finally, WhatsApp's features include a desktop version, users can share up to 2 gigabytes of media files, it permits disappearing messages, 1024-group chats, and better interactions such as emoji reactions to messages and easier features to handle voice messages (WhatsApp blog, 2022).

2.3. Transparency and Accountability in the workplace

Public sector organizations pursue transparency by making information available and communicating it to other actors (Astudillo-Rodas, 2022; Meijer, 2013; Piotrowski & Borry, 2010; Piotrowski & Van Ryzin, 2007). Scholarship has identified that transparency can be seen as outputs/outcomes or processes (Löfgren, 2020; Sunstein, 2018; Bernstein, 2017). The implications of prioritizing one type over the other could alter organizational processes.

It is important to understand the mechanisms that favor transparency practices in public organizations (Heald, 2012; Porumbescu et al., 2021), especially when

transparency has been proven to be insufficient to achieve organizational outcomes (Cucciniello & Nasi, 2014). Organizational and behavioral factors could affect transparency implementation (Arellano-Gault & Lepore, 2011) in a way that public servants could have doubts about behaving transparently in the workplace (Ruijter et al., 2020; Liston-Heyes & Juillet, 2020). For instance, focusing on transparency in processes could provide a better understanding of the decision-making process (Wang & Guan, 2022). Still, it could affect employees' discretion (Bernstein, 2017) and, thus, their attitudes (Sunstein, 2018).

In parallel, accountability, at the individual level, relates to a two-way interaction where a public employee must respond to legitimate questions from another agent, showing that every employee's action has consequences (Bovens, 2007; 2010; Bovens et al., 2014). As expected, internal and external factors affect employee accountability, although these processes always expect employees to be able to justify their actions (Han & Perry, 2020). However, accountability processes can be costly for employees (Schillemans, 2016), and, thus, individuals will interpret rules and procedures differently, affecting their coping mechanisms in relation to these processes (Han & Perry, 2020).

To analyze accountability, scholarship has widely used a principal-agent perspective to understand employees' attitudes (Gailmard, 2014; Greiling & Spraul, 2010; Schillemans & Busuioc, 2014). Following this approach, when studying workplace interactions, hierarchy determines managerial accountability (Bovens et al., 2014; Christensen & Lægreid, 2015). In this scenario, more disclosure not necessarily makes employees behave better because they can adjust their behaviors conveniently for the principal (Prat, 2006; Porumbescu et al., 2021; Arellano-Gault & Lepore, 2011; Busuioc

& Lodge, 2017). Contrary, a social contingency approach suggests that accountability is mostly relational (Bovens et al., 2014; Busuioc & Lodge, 2017; Greiling & Spraul, 2010) and agent's behavior is determined by other factors besides the dyadic relationship (Bovens et al., 2014).

A coping mechanism for public employees dealing with accountability and transparency pressures is blame avoidance (Hood, 2014). This approach suggests that individuals base their behaviors on minimizing any blame that could occur due to their work (Hood, 2007, 2011). This approach states that public employees act under a self-preservation instinct (Kinchin, 2007) that motivates them to follow the rules strictly (Hood, 2011). In this scenario, rule compliance is sensitive among public servants. Public organizations need formalized rules to guarantee that employees will follow the rules accordingly while avoiding individual interpretations (Borry et al., 2018). For example, using emails for work purposes could have reduced formalization because this tool did not follow an established and impersonal formalization procedure; it supported a more personal communication style instead (Meijer, 2008). It is expected that in doubt of the rule, employees will enforce the procedure they are familiar with.

Introducing ICTs into the workplace affects transparency and accountability. First, ICTs facilitate transparency in the workplace (Tummers & Rocco, 2015; Breit et al., 2021; Camarena & Fusi, 2022), but they affect employees' coping mechanisms and behaviors because they are more conscious about being watched (Breit et al., 2021; Bernstein, 2017). Simply, employees can change their behaviors to avoid the increased monitoring and process visibility that comes with more transparency (Bernstein, 2017; Liston-Heyes & Juillet, 2020). Second, using ICTs in the workplace diminishes

employees' discretion (Bovens & Zouridis, 2002; Buffat, 2015; Jorna & Wagenaar, 2007; Busch & Henriksen, 2018; Fleischer & Wanckel, 2023), although they could also enable it (Buffat, 2015; Mazmanian et al., 2013). Thus, it is important to understand the circumstances in which ICTs work in a specific direction (Buffat, 2015). Some argue that ICTs are the determinant factor that affects employees' discretion, whereas others suggest that technology is one among other factors that interfere with discretion (Buffat, 2015).

3. The local context: Colombia and the city of Palmira

The COVID-19 pandemic forced Colombia's public organizations to work remotely to deliver goods and services (Presidencia de la República, 2020). As expected, the use of ICTs heavily increased for public organizations during the pandemic. Moreover, the Colombian Department of Civil Service issued an internal memo encouraging using WhatsApp or any other communication tool that supervisors considered necessary during work hours (Función Pública, 2020). During the COVID-19 pandemic, a survey of Colombian public servants found that more than 90% of respondents would like to work at least one day a week remotely (Schuster & Mayo, 2021). The same survey found that approximately 70% of respondents considered that they used ICTs adequately to work collaboratively.

Palmira is a medium-sized city in the southwest of Colombia with approximately 350,000 inhabitants. It is the 20th largest city in Colombia. The country went into lockdown barely three months after a new Mayor took office. Thus, the new administration had to manage the city "virtually" at the beginning of the 4-year term. In addition, there were major civil unrest and protests that erupted across the country during

the spring of 2021, putting heavier pressure on local authorities to pursue substantial social changes.

4. Method and data

To study how public servants understand and use WhatsApp for work purposes, this study used a qualitative approach that facilitates a thorough analysis of the implications of using this tool while addressing public servants' practices, attitudes, and concerns, especially when revising their transparency and accountability practices. More specifically, I conducted semi-structured interviews with Palmira's public servants. This qualitative approach assumes a postpositivist interpretive framework as the theoretical approximation (Ospina et al., 2018; Creswell & Poth, 2018), meaning that the analysis coming from the data is immersed in the theory described before (Creswell & Poth, 2018).

The qualitative approach followed a case study research strategy (Creswell & Poth, 2018; Nowell & Albrecht, 2019) because I was interested in understanding the specific use of WhatsApp in the workplace. I followed a purposive sampling strategy (complemented by a snowball sampling procedure) which permitted selecting participants who had experienced a specific situation (Creswell & Poth, 2018; Lune & Berg, 2017; Nowell & Albrecht, 2019). In sum, the recruited participants had to use WhatsApp for work purposes. After discussing the research objectives with top managerial officials, the first 12 participants were recruited (see Table 2.1.). I used a non-probabilistic snowball sampling procedure (Lune & Berg, 2017) to recruit the remaining participants. In this case, some participants from the first purposive sample provided some names and contact information of possible participants.

I conducted 24 in-depth semi-structured interviews until reaching saturation, meaning that participants' responses did not add additional perspectives (Creswell & Poth, 2018; Wright II & Headley, 2020; Nowell & Albrecht, 2019). I conducted the interviews during the summer of 2022, corresponding to the third year of the municipal term, and they occurred after the COVID-19 pandemic and the civil unrest and protests from 2021. The interview protocol consisted of a battery of questions divided into 5 sections (see Appendix). Participants could decide not to respond to questions and had the opportunity to retrieve from the study at any time. Rutgers University's Institutional Review Board approved the interview protocol. The interviews varied in length, from a 50-minute maximum to an 18-minute minimum, averaging 29 minutes. I conducted all the interviews during work hours; 9 interviews were on Zoom, 5 of them were at home, and one subject was at a restaurant. The rest of the participants were interviewed in-person at the office.

In-person interviews have been the traditional approach in qualitative studies (Gray et al., 2019) because in-person interactions facilitate rapport with participants (Jenner & Myers, 2019). In contrast, a digital environment could affect the researcher's ability to notice the physical reactions affecting the participant's responses (Gray et al., 2019). However, digital mediums can complement the traditional approach (Archibald et al., 2019). Moreover, evidence suggests that interviews do not vary in quality concerning in-person approaches (Gray et al., 2019; Jenner & Myers, 2019), can be even longer instead, and rapport does not get affected by the virtual environment (Jenner & Myers, 2019; Gray et al., 2019). The Zoom interviews I conducted were, on average, 8 minutes

longer than in-person interviews. Thus, findings were not affected by the medium used to collect the data.

Table 2.1. shows some descriptive information. In synthesis, the sample consisted of 12 men and 12 women. 75% of participants were contractors, the rest were public employees. 4 participants did not have previous public sector experience (and one expressed that the previous experience was more than 10 years ago). It is important to comment that despite not being in a top managerial position, 46% of participants described some coordination role among their responsibilities, which could influence the use of WhatsApp for work purposes.

Table 2.1 Descriptive information

Participant ID	Type of Interview	Gender	Type of Contract	Previous experience in Public sector	Type of recruitment	Coordination role?
P1	Zoom	Male	Contractor	Yes	Purposive	Yes
P2	Zoom	Female	Contractor	Yes	Purposive	No
P3	Zoom	Male	Contractor	Yes	Snowball	No
P4	Zoom	Female	Public Employee	Yes	Purposive	Yes
P5	In-person	Male	Public Employee	Yes	Snowball	Yes
P6	In-person	Female	Contractor	Yes	Snowball	No
P7	Zoom	Female	Contractor	Yes	Snowball	Yes
P8	Zoom	Male	Contractor	Yes	Snowball	Yes
P9	In-person	Female	Contractor	Yes	Snowball	No
P10	In-person	Male	Contractor	No	Purposive	No
P11	Zoom	Male	Contractor	Yes	Purposive	Yes
P12	In-person	Female	Public Employee	No	Purposive	No
P13	In-person	Female	Public Employee	No	Purposive	No
P14	In-person	Male	Public Employee	Yes	Purposive	No
P15	Zoom	Female	Contractor	No	Snowball	Yes
P16	In-person	Female	Contractor	Yes	Snowball	No
P17	In-person	Female	Contractor	No	Snowball	No
P18	Zoom	Male	Contractor	Yes	Snowball	Yes
P19	In-person	Male	Public Employee	Yes*	Purposive	No
P20	In-person	Male	Contractor	No	Purposive	No

Participant ID	Type of Interview	Gender	Type of Contract	Previous experience in Public sector	Type of recruitment	Coordination role?
P21	In-person	Female	Contractor	Yes	Purposive	Yes
P22	In-person	Female	Contractor	Yes	Snowball	Yes
P23	In-person	Male	Contractor	Yes	Purposive	Yes
P24	In-person	Male	Contractor	Yes	Snowball	No

*More than 10 years ago

I conducted the interviews in Spanish, and the transcripts and annotations were uploaded to the software Nvivo for analysis. I analyzed the data in English and translated the selected quotes presented in the next section into English. I conducted a directed content analysis of the interviews to identify patterns, themes, and different meanings immersed in the data (Lune & Berg, 2017). The content analysis facilitated the development of codes that permitted responses to the research question according to the theoretical framework I previously described. I integrated emerging subthemes from the transcripts and notes into larger categories during this process, facilitating the analysis. I did two waves of coding separated in time to secure coherence in the analysis.

5. Findings

The following findings present Palmira's public servants' opinions on WhatsApp's digital transformation within the workplace and its implications on work processes, such as transparency and accountability. These findings summarize participants' perspectives, revising first how WhatsApp has integrated into the workplace, second describing the different coping mechanisms that public servants use when using WhatsApp, and finally, describing their attitudes about WhatsApp and keeping track of information for transparency and accountability purposes.

5.1. Integrating WhatsApp into work processes: changing work dynamics

The COVID-19 pandemic represented a significant and increased use of Information and Communication Technologies in work environments. A few participants commented that before the lockdown, the use of ICTs for work processes was mostly concentrated on emails, but working remotely forced employees to employ other tools to maintain work communications in a virtual environment. Consequently, these participants agreed that WhatsApp became the primary tool for communication during the COVID-19 pandemic, and its use for work purposes seems to remain stable even after the end of lockdowns. Some participants said that WhatsApp was already being used in work environments; however, the COVID-19 pandemic skyrocketed its use; as Participant 5 summarized it: *“WhatsApp increased during the pandemic. I mean, obviously, it was used before, but the pandemic did skyrocket its use, and I feel that this has been maintained.”*

At a broader level, participants use smartphones for connectivity and flexibility. These devices could have the same functions as a desktop or a laptop because people could synchronize their emails, calendar, cloud services, and WhatsApp (*“The cellphone is an extension of oneself.”* Participant 22). Going a step beyond, Participant 18 commented that he had acquired a more expensive data plan because he perceived that not having good-quality data connections could affect real-time communications with the rest of the office. However, participants did not necessarily feel comfortable using a smartphone for work; there were discrepancies. In this matter, participants use their smartphones differently. For example, not everybody had Google Drive (Palmira’s official cloud service provider), their emails, or their work calendar synchronized in their smartphones.

Participants recognized that WhatsApp is a vital tool everyone uses and contributes to immediate communication and rapid responses to daily inquiries and simple tasks. In this matter, participants described that WhatsApp supported a work environment mediated by immediacy in work interactions. Participants commented that WhatsApp speeds up processes (through rapid responses) and save time in organizational processes. Participant 21 summarized it as “[*WhatsApp*] it saves one so much time, because asynchronous communication mechanisms, such as emails, do not guarantee immediacy of things, as is required here [*office*].” However, Participant 11 mentioned that the organization acquired Google Workspace in 2020, which includes Google Hangouts. She insisted that people should communicate through this tool instead of WhatsApp because it was the “institutional licensed tool” for instant messaging. But, the same participant acknowledged WhatsApp’s popularity for work purposes. In sum, questions about its use remain:

“I believe that a balance must be found in using all these tools because not everything through WhatsApp, nor everything in person, nor everything through virtual tools, nor face-to-face meetings. We have to have balance.” (Participant 2)

“I clearly said that sometimes WhatsApp is a functional tool, but it does not solve, in all the cases, the needs or requirements that one has, also because if the person definitely does not want to answer you, they do not answer you either by phone, or by WhatsApp, or by nothing. So, I think that part of the success of WhatsApp is having, as I was saying just now, good interpersonal relationships, respect, good communication... which also depends on its functional success.” (Participant 8)

“Well, because we don't all have a protocol to talk on WhatsApp, nor is it established [formalized]. As I was saying, but simply, in our understanding, we try to express ourselves and receive an answer that sometimes is like... it can be a “yes” or a “no,” and that is enough; or it can be something much more disaggregated that allows you to delve into what you are looking for” (Participant 1).

WhatsApp could act as a double-edged sword where the good and bad features are affected by work practices, and some participants advocated for a balanced use of this tool (*“tools like WhatsApp generate like some, some pros and some cons. In other words, you definitely have mobility, and you have constant communication, unlike what we had before. But it also generates trying to multiply the time we don't have. So I think they are like that paradigm of having mobility but trying to have times that are definitely out of reality.”* Participant 4). Some participants stated that WhatsApp affects social interactions in the workplace by minimizing informal conversations and depersonalizing relationships. For instance, Participant 9 said that *“The uses of technology generate a conflict in me. I feel that, as I was saying, it is useful for many things, but it has degraded many other dynamics of social relations.”* Some participants commented that the benefits of having informal talks that occur in an in-person environment are lost. Sometimes, they do not even know the person they are chatting with.

Contrary, using WhatsApp in the workplace seems to support a work culture of immediacy because people can cut off small talk and go straight to the point (*“I think that at this moment, you are lazy, it is easier to write: "hello, I need to send this file..." and that's it. No, before you would stand up, go upstairs, greet the person who crossed your path, and arrive at the person's place, you greeted her and then asked her the favor”* Participant 11). However, some participants commented that they try to bring the “small talk” into their WhatsApp conversations. In sum, participants commented that WhatsApp had influenced an organizational culture where everything seems urgent, and employees need to solve everything simultaneously. Participant 14 said: *“I don't expect people to respond to me immediately, [...] There are very, very urgent things, but I think there is a*

general feeling that everything is urgent, everything is for now, and the truth is that I have learned that, well, I feel that it is not [not urgent].”

More specifically, participants agreed that WhatsApp has contributed to enhancing virtual interactions because it has reduced face-to-face interactions in the workplace, even after the COVID-19 pandemic. This connectivity increases because WhatsApp has a desktop version where employees can communicate while having access to all the information they need to work. For example, Participant 12 commented that part of her work routine at the start of the day was logging-in to WhatsApp desktop version, along with checking her email and calendar.

Participants stated that today’s ICTs facilitate problem-solving despite not being present at the office (they just need an internet connection). Also, participants commented that having the opportunity to work remotely is positive because it means having extra time for personal matters (they do not want to return to 100% in-person work). Although, this practice and opinions seem to be mediated by the type of work and contract public servants have. For instance, it seems normal that contractors are likely to work remotely due to the specifications of their work contracts. However, participants stated the need for in-person encounters because they are part of human relations; like Participant 1 said: *“It will always be necessary to have face-to-face spaces, especially so as not to dehumanize the work.”*

Participants commented that the organization does not provide work phones, so WhatsApp is linked to their personal phone numbers. Thus, participants described the work dynamic of sharing everyone’s phone number with anybody that needs to chat. Participants recognized that this practice could be blurring work-life boundaries and even

causing stress among them. As Participant 7 expressed: “...*there are moments where I feel overwhelmed, for... for thinking that a personal object is already for public use.*” As a coping mechanism, two participants commented about using WhatsApp Business. This allows using two different phone numbers and hence, facilitates a disconnection after work hours (although this is mediated by the type of contract they have and having a smartphone that permits using two phone numbers).

Participants agreed that WhatsApp has contributed to being permanently connected to the office, altering the work culture. However, they are sensitive that having constant connectivity could affect employees’ well-being and increase stress (even to the point of getting sick because of the permanent connectivity). The permanent connectivity creates a sensation that people need to catch up with work constantly because they perceive they are constantly falling behind. As a coping mechanism, some manifested that they have changed their WhatsApp configuration not to let anyone know if they are “online” or not because, according to them, people assume that being *online* equals being *available*. Similarly, some participants manifested that there could be tension when WhatsApp signals that a message has been read and there is not a prompt response to the message. The following participants summarized these sentiments:

“I think that contrary, the use is getting worse, people are getting more anxious. More things, more stress. So, in the end, we live super, super addicted to cell phones, and it's getting more difficult” (Participant 14).

“And the limits are blurred. I feel that... Sometimes it's a fortune to be connected all the time and sometimes it's... the worst curse because you don't have a life [...] I can [decide to] disconnect. I can never respond, but it is wrongly judged. It is wrongly judged because [WhatsApp] does not tell me I must answer. But if you don't, it's wrong. So, it is the fact that you are always there, connected. It

generates some dynamics that are not right for me, nor with the work schedule, and nor to the work environment.” (Participant 9).

“The fact of being connected more quickly seems to me to have very high costs in all these issues that I am telling you, it does not seem that sometimes it is not worth it” (Participant 5).

However, some participants noted that their job responsibilities mediated their constant connectivity. In this matter, some participants commented that they tried to disconnect after work hours (although it is mediated by the type of contract they had). In addition, some people even managed to disconnect when working on sensitive tasks (not before letting a colleague or their supervisor know that they would not be responding to WhatsApp messages for a while).

5.2. Employees’ practices when using WhatsApp

Participants agreed that WhatsApp contributes to sharing information and has reduced other communication tools, such as phone calls and emails. In particular, participants preferred WhatsApp over phone calls because they thought that making a phone call without asking upfront (through a WhatsApp message) if the other person can be interrupted is perceived as invasive. This practice does not follow in case of emergencies or urgent matters. Similarly, participants commented that WhatsApp helps to share information because it acts as a massive tool to share information, and people are more likely to read a WhatsApp message than an email.

When responding to WhatsApp messages, participants commented that their responses could be mediated by their assessment of the urgent task. In this situation, some participants commented that WhatsApp did not differentiate urgent from important tasks, adding pressure on the individual to classify the messages and prioritize them when

responding to them. For example, Participant 5 commented that WhatsApp does not have a sequential organization that emails have, which helps employees prioritize their tasks. In sum, according to their responses, it seems that these assessments are mediated by the employee's work experience and type of contract (especially when responding after work hours).

Most participants said it is important to respond to WhatsApp messages during work hours. Overall, participants had different opinions on whether to respond immediately or not to a WhatsApp message. The need to respond quickly to WhatsApp messages varies for each person. Some participants argued that they try to respond as fast as possible, whereas others say they respond when they have the time. Moreover, determining the importance of the message could also affect the response speed. In every case, participants agreed that a message from their supervisor (or from somebody above in the hierarchy) had to be considered urgent and important, needing immediate response. Some also mentioned that messages from their colleagues within the same department should also be considered urgent.

Regarding the message tone, participants commented that the degree of formality or informality in the message itself is mediated by the receiver of the message (e.g., supervisors or colleagues from other departments) and the degree of trust there exists between each other. Also, despite recognizing that WhatsApp is more informal than a work email, participants commented that, except when they have established a close bond with a colleague, they use a formal communication tone on WhatsApp because they want to avoid any miscommunication problems. Simply, they feel more secure using formal

language on WhatsApp messages because the digital interaction does not permit them to “read” the receiver’s interpretation of the message tone. For instance, Participant 3 said:

“I believe that it depends a lot on the person, one, and [two,] the specific situation. Let's say, with people with whom I have some confidence, well, let's say that the conversation is with a slightly more jovial language. However, with a person who does not have this confidence, obviously, it [the conversation] will become as serious as possible.”

Few participants commented that WhatsApp’s use could also be mediated by age, suggesting a generational gap when using this specific tool. According to them, older people are less comfortable using WhatsApp, whereas younger generations use it all the time. Also, participants described different practices when responding to WhatsApp messages. For example, three participants expressed that they “archive” chats as a way to mark them as “resolved.” Also, another two expressed how they used it to signal a new task by “not reading the message.”

Participants had different opinions about using voice messages. First, most participants disliked voice messages and emphasized that lengthy ones should be turned into phone calls instead. Also, some recognized that voice messages reduce the possibility of responding during meetings. Yet, except for one participant, they would listen to them (*“I avoid a lot sending voice messages. It seems to me that, in general, people don't like them very much, and they take longer to respond when they are voice notes”* Participant 10). The few people that would send voice messages expressed that they would do it only to make clear and unambiguous the message they want to transmit. Finally, Participant 4 said she preferred text messages because they facilitate tracking old messages (by typing a keyword to search).

Participants agreed that it is normal to receive many WhatsApp messages daily, and some expressed that it is a source of stress (yet, a few even considered it normal and do not think it is stressful). The number of WhatsApp messages varies accordingly to the job responsibilities and task seasonality (for instance, Participant 21 expressed that during specific periods of the year, she can receive 60 to 120 messages per hour). However, Participants seem to cope differently with the number of messages. Some will respond to all of them, and others mentioned that they do not bother to read all the messages. Similarly, participants commented that WhatsApp favors multitasking, especially when people are in meetings. However, Participants 4 and 5 commented that multitasking could be harming people that need a more sequential process to work (also related to differentiating urgent from important tasks).

Overall, participants had negative perceptions of the department's group chat. Except for one participant, everybody expressed that they silenced the group chats. They expressed that their participation in group chats is minimal and avoid reading what is shared through them. Some said that if somebody needs something from them, they will eventually reach out through a direct message. However, some recognized that group chats could help share information and let everyone knows what is happening in real-time. In some situations, as Participant 1 expressed, they could work as a peer pressure mechanism when collaborating. However, their attitudes vary if the work chat is tailored to a specific task or project meaningful to the person, and they usually have fewer members. In this situation, participants commented that they paid attention to these groups and participated. Yet, there is room for improvement, as Participant 9 said:

“There is someone who asks for one thing, sometimes they don't even answer, and someone else asks for something else. It's very rare how it is used. For example,

in groups, for some work, it is like people only see it to enter and write if they need something, and that's it. It's super weird. In other words, there is no such thing as a fluid conversation that has a logical chain. Sometimes, you see those groups, they seem like pure bits and pieces of someone who needed something, sometimes they answered, sometimes no. I mean, it's a very rare thing.”

Participants do not think WhatsApp has increased autonomy in the workplace. Instead, managerial practices (trust) and work culture determine their level of autonomy (“*I don't know if the word is autonomous, but it has allowed me to chase, chase and be chased*” Participant 7). There is also a conflict about responding after work hours.

Interestingly, Participant 20 commented that WhatsApp has allowed him to reach out to anyone he needs, and this not necessarily follows a standard chain of command when communicating with other departments, suggesting that sharing and requesting information does not follow a hierarchical pattern.

Participants agreed that WhatsApp makes interdependence collaboration more agile. In this matter, participants with roles that required more interdependence said that collaborating through WhatsApp facilitates solving bottlenecks more expedited instead of waiting for a meeting. Simultaneously, some suggested that these collaboration processes could be more transparent because everybody could have all the information at hand and know where a determined process is falling behind.

Collaboration also occurs between colleagues. First, participants commented that WhatsApp speeds up communications, meaning that people tend to send a text message to comment that an email (or another type of communication) is being delivered. Second, the degree of informal communication could also be mediated by belonging to the same department/office or not. Participants agreed that when interacting with colleagues from

other departments, they preferred to follow formal and standard procedures (unless they had developed a bond or friendship). However, this is not necessarily a norm.

Participants interact with their supervisors through WhatsApp. Overall, they know their supervisors will not respond immediately to their messages. However, they try to respond as fast as possible whenever their supervisor contacts them (*“It is of total priority, total attention. Everything you are doing at the moment is put off so you can serve him [supervisor]”* Participant 17). Interestingly, Participants 1 and 18 have identified times of the day when they share specific information with their supervisors and expect to get immediate responses.

5.3. WhatsApp and keeping track of procedures

Participants do not associate WhatsApp as a tool to increase transparency. Still, they recognize they use it to share information within the organization because WhatsApp works as an efficient information-sharing system, to the point that it has overshadowed other tools. As Participant 20 synthesized it:

“It's a complicated issue, because even when you send an email, people pay more attention to WhatsApp, and why am I telling you this? I send the internal memos through SIIF [official communication system], which is the document management system in here, and I send them by email, and that's it: I send it. But if I don't send it through WhatsApp, there are people who don't notice it. So, I think that WhatsApp has definitely overshadowed the other communication mechanisms a lot.”

Specifically, participants said that WhatsApp had overshadowed the use of emails and believed that employees pay more attention to WhatsApp than emails. In particular, Participant 18 mentioned that one of the reasons to prefer WhatsApp is because the email interphase is not as interactive and friendly as WhatsApp's, especially when revising it from his smartphone. However, participants mentioned that emails are the official tool to

keep track of their work, whereas WhatsApp is used for informal conversations. There is no homogeneity in the use of emails or WhatsApp, each participant seems to use his own judgment. However, some participants commented that emails are used more frequently when communicating with colleagues outside their offices. For instance, Participant 18 said:

“The thing with email is more like when it is something between departments, between areas: “Ah! I need to leave my formal evidence that I requested that area, or I requested or sent to that department such a thing, or gave it the request.” And rather, social networks [WhatsApp] are already something with a very informal nature, and it is where I know that I do not need evidence; what I need is immediacy. So, I would say that it is seen more among the colleagues in your area or among your own department than towards another one [area]”

Participants used WhatsApp and email at their own convenience and highlighted that they knew when they needed to leave a trace of their progress in an email (or other mechanisms). In addition, three participants mentioned that keeping track of work must be done through emails because it is easy to erase WhatsApp messages conveniently. Similarly, Participant 9 emphasized that WhatsApp’s configuration makes it hard to trace back important information because the application is not meant to save relevant and search information according to standard procedures. Lastly, it is unclear the criteria participants use to make their decisions of leaving traces and keeping track of their work in a different mechanism than WhatsApp. The following statements summarize the situation:

“It is that the nature of the subject itself gives you the point to see if it is necessary to switch to another channel; but I have had to make the decision of saying: I must leave traceability by email” (Participant 16).

“But I do feel that one learns a little to handle certain rules that are not necessarily as, well, written. In other words, it is not that one says: cases A, B, C, are handled

by telephone; D, C, E are handled in such a way or D has to go to signatures for a lawyer to review it. I feel that one ends up kicking the ground a little too” (Participant 2)

“That's like the concern that one has left and well, the times that the consultation has been given, and everyone tells you: “No, WhatsApp does not count as a support mechanism for guidelines.” But still, one continues to use it” (Participant 21)

Most of the participants are not concerned about the possibility of somebody sharing their WhatsApp conversations, mainly because they discuss job-related topics in WhatsApp, and no harm is expected from that. Participants agreed that very delicate matters were never discussed on WhatsApp. Although, they recommended that people should always use formal language when using WhatsApp to avoid misunderstandings. However, a few participants commented that there is always a chance of receiving a screenshot from somebody else. Moreover, some commented that they could have confidential conversations with certain people they trust. For example, Participant 7 said:

“Yes, I have seen how they send me screenshots of “look at what that person told me.” So, I know that I am exposed to that happening to me. And then, I think that the only thing that operates is one, to be vertical, yes? Consistent with what one is writing and what is happening. And if you are speaking in closer terms, it is because you are speaking with people you really trust, and there the problem would be another, not even feeling exposed, but rather feeling betrayed”

6. Discussion

Digital transformation refers to integrating Information and Communication Technologies into the workplace (Eom & Lee, 2022; Mergel et al., 2019). Yet, the effects of bringing these technologies into work processes need further analysis (Mergel, 2013; Ingrams, 2015; Eom & Lee, 2022; Goldfinch et al., 2011). More specifically, I was interested in revising employees' coping mechanisms when using new social media

applications, such as WhatsApp, that alter internal processes. The following discussion analyzes the implications for organizational processes and individual attitudes. A summary of the results can be found in Table 2.2.

Table 2.2 Categorical findings

Category	Idea
WhatsApp and organizational processes	WhatsApp contributes to depersonalization of workplace relationships
	WhatsApp supports a work culture of immediacy
	WhatsApp has introduced a sense of "urgency" in workplace interactions
	WhatsApp contributes to a culture of permanent connectivity to prove responsibility
	WhatsApp facilitates collaboration and agile work
	COVID-19 pandemic accelerated WhatsApp's appropriation as a primary tool for communication
	Emails are perceived as the official mechanisms to keep track of employee's work
WhatsApp and individual attitudes	WhatsApp permits interchange information easily
	WhatsApp is mostly used for simple tasks and rapid responses to daily inquiries
	It is common to receive multiple WhatsApp work messages
	Public servants use WhatsApp differently, their criteria is mediated by: work experience, type of contract, job responsibilities, and age
	Work practices affect the positive and negative perceptions of WhatsApp
	WhatsApp has reduced the use of other communication tools
	Gradual informal formalization of WhatsApp messages (mediated by receiver of message)
WhatsApp is contributing to blurring work-life boundaries	
Hierarchical boundaries are erasing when using WhatsApp	

Source: Author's elaboration

The in-depth interviews revealed that using WhatsApp for work purposes has represented a paradigm shift, contributing to the organization's digital transformation. Participants commented that having a smartphone permitted a permanent connection to the office and facilitated problem-solving from anywhere (despite not being present at the

office). In particular, participants agreed that WhatsApp has contributed to enhancing virtual relationships and reduced the need for face-to-face interactions in the workplace. However, the virtual interactions on WhatsApp have also minimized informal conversations between employees (the benefits of having informal talks that occur in an in-person environment are lost), resulting in a depersonalization of workplace relationships. In this process, results clearly showed that WhatsApp supports a work culture of immediacy where people can avoid the “small talk” and go direct to the point.

Regarding internal communications, the theoretical approach emphasized that the “real-time” interactions facilitated immediate responses (Rajendran et al., 2019; Shih-Ming et al., 2008; Giurge & Bohns, 2021). Integrating WhatsApp into organizational processes also has introduced a sense of urgency in workplace interactions, which is also mediated by the constant connectivity needs that come with this technology (also mediated by their job responsibilities). In this matter, results suggest that in these workplace dynamics, being connected represents being responsible. Moreover, WhatsApp facilitated collaboration between work units which contributed to more agile work because it permitted solving bottlenecks instantly. This interdependent work also represented a dynamic culture where everyone’s personal phone number (WhatsApp is linked to it) is shared anytime with anyone within the organization.

Participants did not associate WhatsApp as a tool to increase transparency. Moreover, most of them are not concerned about the possibility of somebody sharing their WhatsApp conversations, mainly because they discuss job-related topics in WhatsApp, and no harm is expected from that (behaving differently). However, collaborating on WhatsApp could increase process transparency internally because team

members could have all the information at hand and know where a determined process is falling behind.

Participants recognized that emails are the official mechanisms to keep track of their work and progress and highlighted that they knew when they needed to leave a trace of their progress in an email (or other mechanisms). However, they agreed that very delicate matters were never discussed on WhatsApp and should always use formal language when using WhatsApp to avoid misunderstandings (a blame avoidance mechanism (Hood, 2011)).

As expected, results showed that the disruption caused by the COVID-19 pandemic accelerated the appropriation of WhatsApp as a primary tool for communication. In addition, participants commented that its use for work purposes remains stable after the lockdowns. These results are consistent with Grodal's and colleagues's (2023) technology evolution framework. In particular, evidence suggests that before the lockdown, the use of ICTs for work processes was mostly concentrated on emails but working remotely forced employees to use other tools to maintain work communications in a virtual environment, and WhatsApp fit perfectly.

Similarly, following Mergel's and Bretschneider's ICTs adoption model, the degree of use of WhatsApp by Palmira's public servants is determined by the employee's personal judgment, which is mediated by their work experience, type of contract, job responsibilities, and age. In simple terms, everyone uses WhatsApp according to their personal criteria, but, except for one person, participants did not acknowledge specific rulings that regulate its use. However, unlike the bottom-up adoption model, the evidence did not find a "chaotic" environment in relationship with work processes because rules

and procedures are well established. The problem is more related to the work-life balance disjunctive that came with the paradigm shift of constant connectivity. In sum, the positive and negative perceptions of this tool are affected by work practices (some participants advocated for a balanced use of this tool).

WhatsApp is an essential work tool that public employees use to interchange information easily. In this matter, participants agreed that immediate communications and rapid responses to daily inquiries and simple tasks represented its main use, whereas more elaborate interactions were conducted using other mechanisms. Overall, public employees perceived that it is normal to receive multiple WhatsApp messages throughout the day, and they said it was important to respond to them. There were differences in the perception of responding to WhatsApp messages quickly.

Results showed that WhatsApp reduced the use of other communication tools (such as phone calls and emails). For instance, some are more likely to revise their WhatsApp chat than their work email. The overshadowing of work emails also supports Rajendran's and colleagues' (2019) findings. However, participants recognized that work emails were the official tool to keep track of their work. Moreover, there was no homogeneity in using emails or WhatsApp, each participant used their own judgment.

The theoretical approach suggested that WhatsApp could facilitate an “informal formalization” of communications (like Meijer (2008) concluded when analyzing work emails). Results suggest an informal formalization of WhatsApp messages, but results also showed that participants expressed different opinions when discussing the degree of formality immersed in WhatsApp conversations. In this matter, the “formalization” of WhatsApp is mediated by the receiver of the message (e.g., supervisors or colleagues

from other departments), whether they belong to the same department/office or not, and the degree of trust there exists between each other. In sum, public employees use a formal communication tone on WhatsApp because they want to avoid any miscommunication problems.

At the individual level, using WhatsApp for work purposes evidenced different coping mechanisms from public employees. Public servants' attitudes towards WhatsApp are influenced by their job responsibilities and type of contract. These characteristics affected their decision about disconnecting and responding to work chats after work hours (and to a supervisor message extra hours). For instance, two participants commented about using WhatsApp Business which allows using two different lines and hence, facilitates a disconnection after work hours. People also coped differently with managing the multiple WhatsApp chats they receive throughout the day. Results showed that the number of WhatsApp messages varies accordingly to the job responsibilities and task seasonality. Hence, they commented that their responses are mediated by their assessment of the urgent task. In addition, participants agreed on a negative perception of the department's group chat and felt saturated (although they recognized it is a good vehicle to share information rapidly).

The theoretical approach described that ICTs appropriation could generate stress (Camarena & Fusi, 2022). Individually, WhatsApp use for work purposes is generating stress. Participants commented that using WhatsApp, which is linked to their personal phone numbers, is blurring work-life boundaries. In this matter, the need to be connected permanently has created a sensation of a constant "catching up" dynamic, which adds to the environment of immediacy that virtual relationships have nurtured and that has

resulted in the many WhatsApp messages employees interchange daily. These work dynamics are generating stress among public servants.

Finally, these results add to evidence of the polycentric organization (Meijer et al., 2023) and hierarchical horizontalization (Meijer, 2008), especially because WhatsApp permits reaching out to anyone without following a standard chain of command, suggesting that sharing and requesting information does not follow a hierarchical pattern (an even adds to employee's autonomy). However, these WhatsApp interactions still showed a certain degree of bureaucratic culture because participants expressed that messages from a hierarchical superior were prioritized over everything else. In sum, as Fusi & Zhang (2020) discussed regarding other ICTs, WhatsApp has reduced communication barriers and has also favored multiple interactions simultaneously (as Sonnentag (2018) suggested).

7. Conclusions

This essay studied the implications of integrating WhatsApp, the most popular social media instant message application, into organizational work processes. In particular, it revised public servants' coping mechanisms when using this technological tool for work purposes. Public servants are using this tool for internal collaborations, and its popularity for work purposes skyrocketed during the COVID-19 pandemic across the board. Thus, through a series of in-depth semi-structured interviews with public servants in a medium-sized municipality in Colombia, this study revised how public servants integrate WhatsApp into internal work processes (coping mechanisms).

Results identified two levels of analysis. First, concerning the implications for organizational processes, the analysis confirmed that WhatsApp became the primary tool

for internal communication during the COVID-19 pandemic and has remained as such. WhatsApp contributes to depersonalizing workplace relationships, facilitates a culture of immediacy and urgency in workplace interactions, and favors more agile work when collaborating. Also, WhatsApp allows permanent connectivity to the office, which public servants could perceive both as positive and negative. Future research should better revise the implications of these new workplace interactions over specific organizational outcomes. For instance, future research could revise how the new workplace relationships affect public servants' motivation.

Additionally, despite WhatsApp overshadowing other communication tools, public servants still use email as the official mechanism to keep track of their work. However, public servants described a gradual formalization of WhatsApp conversations. Thus, a more thorough analysis is needed to understand better the complementary or competitive interaction between WhatsApp and email. Lastly, authorities could better define how WhatsApp will be used for work purposes, especially differentiating its use as an official tool for organizational communications and the implications of using it as such.

The second level of analysis relates to public servants' individual attitudes. Each person uses WhatsApp differently, and their criterion for using this tool is mediated by their work experience, type of contract, job responsibilities, and in some cases, their age. This way, public servants use WhatsApp to interchange information easily when performing simple tasks that require rapid responses (daily). Also, results showed that it was usual to receive multiple WhatsApp messages daily, although there were

discrepancies when discussing the response speed to these messages. In general, participants agreed that any message from their supervisor must be considered prioritized.

Interestingly, results also described work relationships where hierarchical boundaries are disappearing. Simply, any public servant can reach anyone when needed (even if it is not their direct supervisor). Overall, having a coordination role could incentivize a more intense use of WhatsApp, especially because their jobs usually involve multiple and interdepartmental interactions. Results could not differentiate if specific managerial practices favored or not processes when using WhatsApp, and that needs further revision. Future studies should also revise the person-supervisor fit when interacting with these digital tools.

The results from the qualitative approach could be limited when generalizing their results due to its non-random sample (Nowell & Albrecht, 2019; Lune & Berg, 2017). However, these results signal interesting patterns that could be better tested in future studies and in different contexts. In addition, results did not show major differences between male and female participants, nor on their prior experience working in the public sector. Perhaps, a quantitative approach could provide a further differentiation between these individual characteristics.

In general, results suggested that work practices affect the positive and negative perceptions of WhatsApp, generating stress. For instance, public servants can show negative attitudes because WhatsApp contributes to the blurring of work-life boundaries. Also, contractors are less likely to disconnect from the application after work hours. In this matter, human resources administration policies should be clear on defining these boundaries, especially because public servants are using their personal phones to comply

with these new work dynamics. Future studies should keep revising the factors that trigger stress when using WhatsApp in the workplace.

3. Determining public managers' attitudes when interacting through WhatsApp for work purposes

1. Introduction

Information and Communication Technologies (ICTs) have introduced new dynamics into the workplace. Public organizations are changing their organizational processes by integrating ICTs, which scholars have defined as digital transformation (Eom & Lee, 2022; Mergel et al., 2019). This represents a profound transformation of managerial processes (Eom & Lee, 2022). For example, organizations adapted to the COVID-19 pandemic challenges and have sustained these new work dynamics. Using ICTs facilitates sharing information instantly that contributes to decision-making processes (Camarena & Fusi, 2022; Meijer et al., 2022). In this direction, the evolving nature of ICTs could require strong adaptative attitudes from organizational leaders (Roman et al., 2018). However, little is known about the effects of ICTs on organizational leaders (Roman et al., 2018; Van Wart et al., 2017).

WhatsApp is the most popular social media instant messaging tool, and individuals use it for work purposes, altering communications and interactions between employees and supervisors. Managers must have fluent communication with their subordinates to achieve organizational outcomes. Here, managing internal communications (formal and informal) adequately is important (Suh & Battaglio, 2021). Hence, there is a need to study the challenges these new managerial dynamics could generate for organizational leaders (Loyless, 2022; Rosen et al., 2019). Understanding

these new digital interactions is essential because managers use them to connect with subordinates for organizational processes (like transparency and accountability).

From a managerial perspective, instant messages permit transmitting instructions, requesting information, and having discussions anytime and at low costs (Rajendran et al., 2019). Yet, little is known about WhatsApp use in the public workplace. In this matter, scholarship still needs to study how new technologies affect managers (Feeney & Welch, 2016). For example, governments have assumed that using social media (which is a new technology) in public organizations has been intrinsically positive (Fusi & Feeney, 2018). Some scholars have started to revise managers' attitudes and perceptions when using social media (Feeney & Welch, 2016; Fusi & Feeney, 2018; Zhang & Feeney, 2018) but have not revised instant messaging tools. Here, public managers are crucial when establishing an ICTs adoption culture in the workplace. Therefore, it is vital to understand how managers can actively use ICTs in their day-to-day activities (Zhang & Feeney, 2020).

Considering the use of WhatsApp in government settings, this paper addresses the question: How are public managers using WhatsApp as a managerial tool for internal processes? WhatsApp use for work purposes alters communications and interactions between employees and supervisors. Scholarship needs to address how work attitudes change due to social media use (Arellano-Gault & Lepore, 2011; Feeney & Welch, 2016). It is essential to understand why and how public managers use WhatsApp to communicate with their subordinates. Social media applications like WhatsApp can foster effective public management practices because they simplify the collaborative transmission of information internally (Feeney & Welch, 2016; Oliveira & Welch, 2013;

Zheng & Zheng, 2014). These practices look informal but may have profound implications in day-to-day work arrangements.

In addition, when understanding organizational processes, scholarship has understudied organizational and behavioral factors determining transparency implementation (Arellano-Gault & Lepore, 2011). Evidence suggests that transparency influences decision-making processes (Heald, 2006; Heide & Villeneuve, 2020), affecting the willingness of individuals to disclose information (Pasquier & Villeneuve, 2007; Pozen, 2020). Similarly, knowing that transparency reduces the need for formal accountability mechanisms (Meijer, 2014), managerial decisions that influence disclosing information also affect the type of control-discretion dynamics that occur in the workplace between supervisors and employees (Christensen & Lægreid, 2015). Thus, WhatsApp adds a new mechanism managers need to consider when pursuing transparency and accountability in the workplace.

The following study analyzes public managers' adaptation processes to the new work dynamics when using WhatsApp for work purposes. It begins by discussing the research on transparency, accountability, and ICTs. It will then describe the local context and the methodological approach to respond to the research question presented above. Next, it will present the findings from the qualitative approach, and provide an overall perspective on how managers use ICTs in the workplace, what are the managerial implications, and how they interact with transparency and accountability. Finally, the study will highlight the most important findings and make some concluding remarks, including suggestions for expanding this research.

2. Theoretical framework.

2.1. Transparency and accountability in the workplace.

To be accountable means that the public servant will provide answers for a specific behavior to a forum that legitimately asks for responses (Bovens et al., 2014), representing a dyadic relationship in which the public servant knows that her actions have consequences (Bovens, 2007; 2010). Similarly, transparency as a concept describes how public organizations make information available and communicate it to other actors (Astudillo-Rodas, 2022; Meijer, 2013; Piotrowski & Borry, 2010). Thus, some scholars have suggested that having more transparency diminishes the need for formal accountability mechanisms because transparency facilitates accountability (Meijer, 2014).

Studies on accountability have widely used a principal-agent approach to understand employees' attitudes (Gailmard, 2014; Greiling & Spraul, 2010; Schillemans & Busuioc, 2014). Under this premise, scholarship has explored different types of accountability. For instance, from an internal perspective (Greiling & Spraul, 2010), hierarchical positions determine administrative or managerial accountability (Bovens et al., 2014; Christensen & Lægreid, 2015). Also, accountability can be ex-ante or ex-post, which alters employees' behaviors (Schillemans, 2016).

In opposition to the principal-agent approach that stands for asymmetry of information management, social contingency models have highlighted the idea that accountability is predominantly relational (Bovens et al., 2014; Busuioc & Lodge, 2017; Greiling & Spraul, 2010). These contingency approaches suggest other mechanisms that mediate public servants' behaviors besides the dyadic relationship between the principal and the agent (Bovens et al., 2014). Thus, when addressing accountability, studies should

also revise the relational interactions of the actors (Busuoiu & Lodge, 2017), meaning that context and other organizational factors matter.

Scholarship has understudied organizational and behavioral factors determining public organizations' transparency implementation (Arellano-Gault & Lepore, 2011). It is essential to describe these internal processes because they influence how public organizations engage with such tasks (Meijer, 2013). In this scenario, empirical research has addressed the resistance by government organizations to act transparently (Ruijter et al., 2020), finding that in some situations, agencies may comply with the minimum requirements (Arellano-Gault & Lepore, 2011). Additionally, transparency and accountability measures may unevenly affect different organizational units (Porumbescu et al., 2021), adding to the need to better understand the institutional arrangements that favor or deter specific attitudes (Porumbescu et al., 2021).

Some challenges affect transparency and accountability implementation within public organizations. First, it is relevant to analyze how data is stored and transformed into information that can be shared (Conradie & Choenni, 2014). Second, managerial processes need further attention. Here, centralization or work routines affect engaging in transparency and accountability attitudes (Grimmelikhuijsen & Feeney, 2017). Also, certain employee attitudes like openness (la Porte et al., 2002) or risk-taking behaviors (Grimmelikhuijsen & Feeney, 2017) influence public organizations' adoption of transparency policies.

Given this context, research has concentrated on transparency, seen as outputs and outcomes rather than processes (Löfgren, 2020; Sunstein, 2018). According to Sunstein (2018), transparency and accountability on processes may affect employees' attitudes

because they may be concerned with the negative consequences of opening their work processes to the public. Additionally, the organizational culture that contributes to a bureaucratic-oriented administration may favor specific values (such as efficiency, effectiveness, and rule-following) (Hood, 2014; Zhang & Feeney, 2020) that add to the tradeoff between outputs and processes (Heald, 2012). For example, focusing on processes could influence managers to pay more attention to the quality of their decision processes, adding a delay (Schillemans, 2015).

Scholarship needs a better understanding of transparency's effect on decision-making processes (Cucciniello et al., 2017). On the one hand, transparency and accountability mandates may be challenging to implement at the managerial level due to the complexity of their procedures (Ingrams, 2017) or the lack of control over the process, which gives a certain degree of uncertainty in the outcomes (Lindstedt & Naurin, 2010; Van Ryzin, 2007). On the other hand, from a principal-agent perspective, transparency and accountability processes reduce information asymmetry, giving top officials more leverage to manage (Bauhr & Carlitz, 2020).

Managers are responsible for deciding what is best for their organizations, though there may be conflicting values when implementing these practices (Harrison et al., 2012). Here, top officials must balance the risks of complying with transparency and accountability practices (Ben-Aaron et al., 2017). First, they may implement these practices to signal good behavior to their stakeholders (Schnell, 2018). However, the inefficiency that may occur when complying with specific requests may turn their motivation away (Piotrowski, 2010). Additionally, in some contexts, more accountability does not produce better outcomes, generating a paradox (Bovens, 2010; Van Thiel &

Leeuw, 2002) related to employees' attitudes toward the reports and measurements they need to comply with (Van Thiel & Leeuw, 2002). Therefore, it is fundamental that managers internalize transparency and accountability because they may adapt their behaviors toward the desired goals (Arellano-Gault & Lepore, 2011).

Managers have some freedom to implement the degree to which transparency and accountability will be present in their organizations (Fairbanks et al., 2007). However, from a principal-agent perspective, organizations have been designed to manage untrustworthy officials (Arellano-Gault & Lepore, 2011), whereas ICTs facilitate managerial supervision (Buffat, 2015). So, managers' role will seek to limit employees' discretion by manipulating accountability and transparency procedures (Arellano-Gault & Lepore, 2011; Fenster, 2006; Lindstedt & Naurin, 2010; Meijer, 2013; Schillemans, 2015) while minimizing the possibility of whistleblowing and leaks (Prat, 2005).

Understanding that pressure for accountability may affect public servants' behaviors, they may even assume defensive actions (Aleksavska et al., 2019). A specific attitude to cope with transparency and accountability within the workplace is blame avoidance, which has not been deeply studied (Hood, 2014). From this perspective, public servants may try to avoid facing negative bias (Hood, 2007, 2011). When individuals are motivated by blame avoidance, they may follow the rules strictly to avoid being held accountable (Hood, 2011) because a self-preservation instinct dominates employees' attitudes (Kinchin, 2007). For example, formalization processes, and in some cases, red tape, could affect managers to follow the existing rules strictly (Suh & Battaglio, 2021). Therefore, it is expected that blame-avoidance behaviors, such as

following the existing rules, may mediate public managers' attitudes toward transparency and accountability when adopting new ICTs.

2.2. Information and Communication Technologies (ICTs) in the workplace.

Information and Communication Technologies (ICTs) introduced a new paradigm for sharing information (Ahn, 2011) and established new social arrangements (Mergel & Bretschneider, 2013). However, there is evidence that adopting technology does not guarantee success (Bromberg & Manoharan, 2015; Feeney & Welch, 2016; Welch & Feeney, 2014). Thus, scholarship still needs to assess the efficiency and effectiveness of introducing ICTs in the workplace (Mergel, 2013; Ingrams, 2015; Eom & Lee, 2022; Goldfinch et al., 2011).

ICTs are perceived as tools and not ends (Christensen & Læg Reid, 2020). Hence, it is essential to understand how they interact with other institutional factors (Christensen & Læg Reid, 2020; Steinbach et al., 2019). For instance, organizational culture affects ICTs adoption (Christensen & Læg Reid, 2020; Fusi & Feeney, 2018; Zhang & Feeney, 2020; Schlagwein & Prasarnphanich, 2011; Welch & Feeney, 2014). At the same time, adopting ICTs may change the organizational culture because it reduces communication barriers between employees and supervisors, allowing them to connect digitally (Fusi & Zhang, 2020). Thus, it is necessary to understand how public managers use ICTs to connect with their subordinates.

Digital transformation has altered leadership practices (Van Wart et al., 2017). Particularly, scholars are starting to adopt an e-leadership perspective to acknowledge the new managerial processes that are mediated by ICTs (Roman et al., 2018), where public managers are required to adapt to these new technological challenges (Roman et al.,

2018). Public managers' attitudes mediate the introduction of ICTs in public organizations (Welch & Feeney, 2014; Zhang & Feeney, 2018). Thus, they decide to either embrace the technological transformations or keep the status quo. It seems that ICTs vary among hierarchical positions, but they all affect coordination approaches within the organization (Christensen & Lægreid, 2020; Lee, 2008). Therefore, there is a need to understand what drives managers' perceptions to adopt these initiatives, where evidence suggests that personal values heavily affect their decisions (Fusi & Feeney, 2018; Zhang & Feeney, 2018).

Ines Mergel and Stuart Bretschneider (2013) developed a bottom-up framework of ICT adoption that helps to understand this process. They described a three-stage model of adoption that develops over time, as follows: 1) Individuals ("intrapreneurs") informally use the new technology; they have used it in different contexts or the past and believe that bringing it to the workplace will create positive outcomes. 2) Chaos erupts when more people start using the new technology with informal rules (and even different technologies for the same purpose). In this stage, organizational leaders support its use and request some standardization. 3) The new technology is institutionalized (new status quo), with clear rules and procedures of use (previous stages bring conflict when using the new technology for personal and professional use). Mergel & Bretschneider's (2013) model describes the diffusion of technology in the workplace, but it does not explain the reasons for adopting it nor human resource implications on employees' attitudes.

2.3.Introducing social media tools in the workplace.

Social media has become more prominent in the workplace though it originated for private purposes (Fusi & Feeney, 2018; Fusi & Zhang, 2020; Schlagwein &

Prasarnphanich, 2011) and has excellent popularity among those who want to communicate and collaborate (Feeney & Welch, 2016). Oliveira & Welch (2013) argued that social media could be used to disseminate information, feedback, citizen participation, and internal collaboration. Despite its potential, evidence suggests that governments use social media differently (Oliveira & Welch, 2013). It is important to understand the different applications and purposes that stand out when using social media in the workplace (Feeney & Welch, 2016).

Social media can foster effective public management practices because it simplifies the collaborative transmission of information internally and externally (Feeney & Welch, 2016; Oliveira & Welch, 2013; Zheng & Zheng, 2014). In this scenario, social media has an interactive nature (Feeney & Welch, 2016; Fusi & Feeney, 2018) because it follows a two-way communication that permits information exchange (Fusi & Zhang, 2020; Hofmann et al., 2013; Nduhura & Prieler, 2017; Oliveira & Welch, 2013). Furthermore, social media seems attractive to implement in public organizations because it is free (Fusi & Feeney, 2018). It also follows a bottom-up approach, allowing more employees to use it in a less hierarchical and more dynamic setting (Feeney & Welch, 2016; Fusi & Feeney, 2018; Porumbescu, 2017).

Managerial practices that encourage social media use may favor a smoother adoption in the workplace (Fusi & Zhang, 2020). Using social media in public organizations has different challenges for public managers regarding data management, interactions, and technical capacity (Bertot et al., 2012; Feeney & Welch, 2016; Li & Feeney, 2014). Managers could assume a proactive approach (Fusi & Feeney, 2018),

mainly because social media is malleable and easily adapts to different situations (Feeney & Welch, 2016).

Among social media platforms, instant messaging (such as WhatsApp, WeChat, KaKaoTalk, Line, or Google Hangout) is used for internal collaboration (Rajendran et al., 2019). More specifically, WhatsApp has become the most popular instant messaging tool globally (WhatsApp blog, 2022). Instant messages permit the interchange of short-text real-time messages while signaling who is available at the moment (Cameron & Webster, 2005). Its use raises the question of whether instant messaging could complement or replace other types of technologies in the public sphere, especially when noticing that these types of communications have been praised for using informal manners.

Using instant messages in the workplace represented the possibility of being always online despite being physically present or not at the office (Sonnetag, 2018; Bittman, Brown & Wajcman 2009). This feature represents the possibility to multitask because there is the opportunity to interact with different people simultaneously because of being more “available” (Sonnetag, 2018). Simultaneously, they can also increase work interruptions throughout the day (Rajendran et al., 2019; Ter Hoeven et al., 2016).

Employees feel comfortable using instant messaging in the workplace, although it has not been officially accepted as a formal tool (Rajendran et al., 2019). Thus, people perceive instant messaging as informal communication because of the difficulty of securing information (Cameron & Webster, 2005). For instance, WhatsApp is used to share information (Nobre et al., 2020), but its users have expressed concerns about how the information is being stored and what could happen in case of stolen devices (Meyer et al., 2021).

In an early management study, Cameron and Webster (2005) argued that employees still preferred a paper trail for accountability purposes despite the benefits of instant messaging. The introduction of instant messages into the workplace has created an adversarial and/or complimentary relationship with the use of emails (Rajendran et al., 2019). Instant messages could work better when there is a need for immediate and real-time responses (Rajendran et al., 2019; Shih-Ming et al., 2008), whereas the asynchronous nature of emails makes them ineffective in some situations (Rajendran et al., 2019).

From a managerial perspective, instant messages permit transmitting instructions, requesting information, and having discussions anytime and at low costs (Rajendran et al., 2019). In addition, they facilitate monitoring employees (Cameron & Webster, 2005; Dewett & Jones, 2001), but they could create a problem when assessing subordinates' availability and presence (Cameron & Webster, 2005). Also, there is an opportunity to make informed decisions more efficiently, leading to a faster decision-making process (Dewett & Jones, 2001) and improving innovation and solutions to problems (Sonntag, 2018).

WhatsApp was conceived as a smartphone instant messaging application that quickly became the most popular (Fernández-Ardévol & Rosales, 2017; Terkan & Celebi, 2020), reaching more than 2 billion users in 2020 (WhatsApp Blog, 2020). It is very popular everywhere except in North America (Fernández-Ardévol & Rosales, 2017). In short, WhatsApp allows interchanging real-time text messages and information to individuals and groups (Church, & de Oliveira, 2013; Meyer et al., 2021; Nobre et al.,

2020; Montag et al., 2015) at no cost because it uses the device's data connection or the internet (Meyer et al., 2021; Montag et al., 2015; O'Hara et al., 2014; Sun, 2020).

WhatsApp was introduced in 2009 and has regularly changed to facilitate the user experience. Nowadays, according to the official WhatsApp blog (2022), the tool offers end-to-end encryption and protected backup to its users. It allows sharing up to 2 gigabytes of media files and features a desktop version. WhatsApp's latest update introduced in-chat polls, 32-people video callings, and groups with up to 1024 users. It also allowed disappearing messages, emoji reactions to messages, and better features to handle voice messages (such as fast playback) and group chats.

3. The local context: Colombia and the city of Palmira.

Colombia is an approximately 50-million inhabitant South American country affected by the COVID-19 pandemic, forcing public organizations to work remotely while ensuring the proper service provision (Presidencia de la República, 2020). While being remote, public organizations had to make public, on their websites, what channels they will use to engage with citizens. Remote work meant heavy use of ICTs for public servants. In this scenario, the Colombian Department of Civil Service recommended that public servants use WhatsApp (or any other ICTs) that their supervisors considered appropriate to work during work hours (Función Pública, 2020).

A recent survey on public servants regarding the work-from-home experience during COVID-19 (Schuster & Mayo, 2021) concluded that at least 90% of respondents would like to work remotely at least one day a week. Also, about 70% thought that they used ICTs for collaborative work adequately. Finally, about two-thirds of respondents

positively perceive their leaders when managing remote teams. Similarly, the 2018 LatinBarometer survey determined that 67% of people in Colombia use WhatsApp.

Colombia's institutions give broad discretion to elected officials to appoint their executive leaders. Governments have administrative and fiscal autonomy for various policy areas at the local level. Also, Colombia's political system determines local elections every four years, and reelection is prohibited. Therefore, new governments start their term every four years on 01/01, two months after the elections. In October 2019, in the city of Palmira, a medium-sized city in the southwest with approximately 350,000 inhabitants (the 20th largest city in Colombia), an independent candidate defeated the incumbent's successor by a short margin (less than a 5% difference). The new Mayor (early 30s, with work experience in national and local governments and the national Congress) has tried to develop his vision to take the city through a "new path" where the use of ICTs plays a significant role. Simultaneously, the new government had to deal with the COVID-19 pandemic (the crisis hit when they were just three months into office). And most recently, the civil unrests and protests that spread throughout Colombia in the spring of 2021 put enormous pressure on local authorities to accelerate substantial social changes.

Palmira's latest administrative reform (from 2016) established that the city would have 43 top managerial positions: 15 secretaries, 20 deputy secretaries, and eight departments directly accountable to the mayor's Office. Palmira also has six decentralized units (they have administrative, legal, and budgetary autonomy); the Mayor appoints their directors through a board where the municipality has the majority. Palmira's

administrative structure consists of heavy-policy-oriented units, while others are more oriented to managerial and internal operations.

4. Data and Method

The study relied on a qualitative approach to answer how managers understand and use WhatsApp in the workplace; more specifically, the study conducted semi-structured interviews with Palmira's freely-appointed top officials directly appointed by the Mayor. These officials can be secretaries, deputy secretaries, department heads, or directors for the decentralized units. Following Ospina's, Esteve's, and Lee's assessment of qualitative studies (2018), the study follows a postpositivist interpretive framework of analysis, facilitating an analysis that follows the theoretical framework from the previous sections and uses a case study as the qualitative approach (Creswell & Poth, 2018).

The study conducted a purposive sampling strategy, which permits a selection of participants that have experienced a specific situation (Creswell & Poth, 2018; Lune & Berg, 2017). I interviewed current freely-appointed top officials with managerial responsibilities. The purposive sampling left three participants out of the analysis (from an original sample of 34): one had recently resigned from the managerial position, the other did not have managerial responsibilities (despite being freely appointed), and the last one was not a freely-appointed official (but was a top manager). The final 31 interviews with top officials represented 17 policy-oriented officials and 14 internal-operative-oriented officials, ensuring to include different types of officials, some more visible to the public than others. The participants are divided as follows: 10 secretaries, 12 deputy secretaries, seven heads of departments, and two directors for decentralized

units. In addition, one of the directors left during the time of data collection, permitting an interview with the new director; both interviews were included in this analysis.

The study achieved saturation so that participants' responses described redundancies and no new perspectives were revealed by including new subjects (Creswell & Poth, 2018; Wright II & Headley, 2020; Nowell & Albrecht, 2019). Subjects were given the option to not respond to questions and the opportunity to retrieve from the study at any time. The interviews took place over a span of 4 months during the spring and summer of 2022, corresponding to the third year of the municipal term, and they occurred after facing the COVID-19 pandemic and the civil unrest and protests from 2021.

Table 3.1. shows some descriptive information. First, 52% of the participants were female. Also, 14 participants were relatively new in their position (they had been in that role less than a year), whereas 12 commented that it was their first time in a managerial position in the public sector. Also, three people expressed that it was their first experience in the public sector. Each interviewee was asked a battery of questions from an interview protocol divided into four sections (see Appendix). Rutgers University's Institutional Review Board approved the instrument. The interviews varied in length, from a 60-minute maximum to a 21-minutes minimum, averaging 36 minutes.

Lastly, because of their busy agendas as managers, they could take the interview virtually or in person (audio and video recordings were mentioned upfront) at any time of the day. Hence, 25 participants were interviewed on video; one interview was conducted over the weekend, 7 participants were at home, one was in a restaurant, one was in a convention center, and two participants did the interview while in the car; the rest were at

their offices. Evidence suggests no significant differences between digital and in-person interviews (Gray et al., 2019; Jenner & Myers, 2019). In this study, in-person and Zoom interviews averaged the same length.

Table 3.1. Descriptive information

Participant ID	Type of Interview	Gender	Position	Interview Location	New to public sector?	Previous experience as a public manager?	Recently appointed (less than a year)	Type of department
P1^	Zoom	Female	Secretary	Home	No	No	No	Policy-oriented
P2	Zoom	Male	Secretary	Restaurant	No	Yes	Yes	Managerial-oriented
P3^	Zoom	Male	Secretary	Office	Yes	No	Yes	Policy-oriented
P4	Zoom	Female	Deputy Secretary	Office	No	No	Yes	Policy-oriented
P5	Zoom	Female	Secretary	Home	No	Yes	No	Policy-oriented
P6	Zoom	Female	Deputy Secretary	Office	No	Yes	No	Policy-oriented
P7	Zoom	Female	Secretary	Office	No	Yes	No	Policy-oriented
P8	Zoom	Female	Head of Department	Office	No	Yes	No	Managerial-oriented
P9	Zoom	Male	Deputy Secretary	Convention Center	No	No	No	Managerial-oriented
P10	Zoom	Female	Deputy Secretary	Office	No	Yes	No	Managerial-oriented
P11	Zoom	Male	Deputy Secretary	Car	No	No	Yes	Policy-oriented
P12	Zoom	Male	Deputy Secretary	Home	Yes	No	No	Policy-oriented
P13	Zoom	Male	Deputy Secretary	Office	No	Yes	No	Managerial-oriented
P14	Zoom	Male	Deputy Secretary	Office	No	Yes	No	Policy-oriented
P15	Zoom	Male	Head of Department	Office	No	Yes	Yes	Managerial-oriented

Participant ID	Type of Interview	Gender	Position	Interview Location	New to public sector?	Previous experience as a public manager?	Recently appointed (less than a year)	Type of department
P16	Zoom	Female	Secretary	Office	No	Yes	No	Managerial-oriented
P17	Zoom	Male	Secretary	Office	No	No	Yes	Policy-oriented
P18*	Zoom	Male	Head of Department	Office	No	Yes	No	Policy-oriented
P19*	Zoom	Male	Head of Department	Office	No	No	Yes	Managerial-oriented
P20	Zoom	Female	Secretary	Car	No	Yes	Yes	Policy-oriented
P21	Zoom	Female	Head of Department	Office	No	Yes	Yes	Managerial-oriented
P22	Zoom	Male	Secretary	Office	No	Yes	No	Policy-oriented
P23	Zoom	Male	Head of Department	Home	No	No	Yes	Managerial-oriented
P24	Zoom	Male	Head of Department	Office	No	No	No	Policy-oriented
P25	Zoom	Male	Director	Home	No	Yes	No	Managerial-oriented
P26	Zoom	Female	Deputy Secretary	Home	No	Yes	Yes	Policy-oriented
P27	Zoom	Female	Secretary	Home	No	Yes	No	Managerial-oriented
P28	In-person	Female	Deputy Secretary	Office	No	Yes	No	Managerial-oriented
P29	In-person	Male	Secretary	Office	Yes	No	Yes	Policy-oriented
P30*	In-person	Female	**	Office	No	No	Yes	Managerial-oriented
P31	In-person	Female	Head of Department	Office	No	No	Yes	Policy-oriented
P32	In-person	Male	Deputy Secretary	Office	No	Yes	Yes	Managerial-oriented
P33	In-person	Female	Deputy Secretary	Office	No	Yes	No	Policy-oriented

Participant ID	Type of Interview	Gender	Position	Interview Location	New to public sector?	Previous experience as a public manager?	Recently appointed (less than a year)	Type of department
P34	In-person	Female	Head of Department	Office	No	No	Yes	Policy-oriented

*Not considered in the analysis

** Not a managerial position

^ Same position

The interviews were conducted in Spanish, and the transcripts and annotations were uploaded to the software Nvivo for analysis. The analysis was conducted in English, and I also translated the specific quotes presented in the next section into English. I conducted a directed content analysis of the interviews to identify patterns, themes, and different meanings immersed in the data (Lune & Berg, 2017). The content analysis worked as a coding mechanism to analyze the raw data from existing theories and explanations described in the theoretical section of the study. During the coding process, emergent subthemes were integrated into larger categories that overlapped and facilitated the analysis. I conducted two waves of coding separated in time to secure coherence in the analysis. In this scenario, the establishment of codes and patterns developed from the theoretical framework and in opposition to a conventional content analysis that follows a grounded approach, where the codes emerge from the data.

5. Findings

The following analysis summarizes the findings from the semi-structured interviews with Palmira's top officials. This analysis first revises how WhatsApp affects day-to-day practices, suggesting a change in Palmira's organizational culture and its use as an ICT in the workplace. Second, it analyses how WhatsApp has contributed to

different managerial practices. Lastly, the analysis describes how this tool has implications for transparency and accountability in the workplace.

5.1. WhatsApp facilitated organizational changes.

Participants agreed that the COVID-19 pandemic facilitated an organizational change because they transitioned from paper-based in-person practices to a virtual-based interaction, where WhatsApp acquired an essential role in the workplace compared to other ICTs. Some participants even commented that the COVID-19 pandemic showed top officials that the public sector must pursue a digital transformation and that achieving positive results in that endeavor was possible. Here, most participants seemed to agree that the digital transformation meant a more intense use of their personal cell phones for work-related purposes. Participant 32 resumed it this way:

“Until two years ago, the cell phone was a personal tool, Ok? We use our cell phones as a tool to call, answer and respond, but on a personal level. After the pandemic, I would think that all these tools that opened up to provide a solution to the dynamics that we faced in 2020, well, they permitted (or managed to make) the cell phone become a tool for work and passed a threshold, Ok? From a personal to a work environment.”

Participants commented that the intense use of smartphones in the workplace also represented a paradigm shift regarding the possibility of being “present” in a virtual environment and not necessarily physically in the office. According to them, this perspective also meant a different approach to working remotely because they did not have to be at the office to manage adequately. Some even mentioned how they use their computer less than their smartphones, especially when not at the office. Participants agreed that they could now work from everywhere, bringing a different dynamism to office interactions because they do not have to have in-person meetings with their

subordinates. For instance, Participant 13 commented, "*One of the great advantages is the freedom that WhatsApp can give you. You may be running personal errands, on the street, flirting with your girlfriend in the park, yet you are connected to the office.*"

However, this dynamic also created a tradeoff because participants expressed that they could lose their work-life balance. First, most felt comfortable using their smartphones for work, though sometimes they could feel exhausted. But they understood that being in a managerial position means that they can be reached anytime; thus, they perceive that they have to always be "on call." Interestingly, the few participants that did not agree with this sentiment were from managerial-oriented departments. Second, this creates a negative sentiment because they feel their personal space is being violated, but their sense of responsibility prevails. Third, participants commented that their private WhatsApp conversations got relegated to the bottom of their chats throughout the day, missing the opportunity to interact with their personal contacts or respond to threaded conversations because they primarily replied to work-related chats. As Participant 13 stated it:

"I believe that in the legal aspect, there is a lack of regulation about managing social media, which has already begun because Congress started to regulate this issue, but at the same time, we need to create awareness of respect about the difference in schedules: work, personal time, family time, couple's time... and that they are respected, that they are not invasive because otherwise, we will never have time for ourselves."

5.2. Top officials' use of Information and Communication Technologies.

WhatsApp must be linked to a cellphone number and internet connection, meaning that people need a smartphone to operate it. Participants categorically expressed that their smartphones are essential in the workplace because the different tools that can

be used in their smartphones facilitate managerial practices and interaction with other people. For instance, Participant 7 mentioned:

“Everything! everything is in this device. Everything can be done through a single device, that is, a cell phone, a single communication device that connects my phone with anything, with my desktop computer at the office, with my laptop, and with everything. Well... we are "connecting people" all the time.”

Participants commented on how their devices were determinant to perform well at work; as subject 12 stated, “... *when people say that "the office goes on the cell phone" I believe it's well delimited.*” Few participants even suggested that they felt useless when they did not have their smartphones with them. For instance, a few of them provided specific examples that concerned them, like running out of battery, not always being synchronized in the cloud, not having the most updated smartphone to work correctly, not having a good internet connection, or experiencing WhatsApp malfunctions.

5.3. WhatsApp as a managerial tool.

From a supervisor-employee relationship, WhatsApp helps monitor employees. Some participants perceived that their subordinates respond reactively to their supervisor's requests. For example, Participant 1 said that when interacting with her employees: “*I am not reaching out to say hello; I am writing to you because I really need you.*” Six participants commented that their subordinates were proactive when sharing information with them. In addition, they all seemed to acknowledge that they could not force their employees to use WhatsApp. Participants agreed that they only required that anyone who is not an active WhatsApp user use another formal communication channel to interact in the workplace. The following quote summarizes the different uses top officials give to WhatsApp:

“[WhatsApp] I use it to ask for progress, to follow up, I ask them to assign tasks, to assign activities, I use it to ask questions; eventually I'm in a meeting, and I need information, so I also use it for that, as I also use it to ask someone who had an accident yesterday if he is better, if he is doing well” [Participant 5]

Participants agreed that WhatsApp is a managerial tool used in the workplace to increase performance and improve productivity. In addition, some participants said that WhatsApp's group chats facilitated collaboration between departments/units because they could be task-oriented and have the required personnel in the conversation (at hand) to solve the specific issue; once the task is done, the group chat can be eliminated and move on. Also, some expressed how convenient it is for multitasking because they could simultaneously be in a meeting and respond to WhatsApp messages (*“for example, when you see me looking sideways, it's because I'm looking at my cell phone and I'm looking at what's happening in different things that I'm following.”* Participant 12). Yet, they generally do not think WhatsApp contributes to making better decisions. Participant 20 summarized it:

“It is a very good work tool to inform, facilitate and shorten. So, to inform all the audiences with whom one has various chats, right? To bring information closer, so, to bring information closer between each other, but also to bring distances closer in the sense that, 'I can't be with you, but here I send you...' I don't know, from my location to the report I must present now, right? And to shorten is to shorten the time, right? I mean, this makes it much easier for us to manage time or parallel time, right?”

However, there is heterogeneity in how top officials use it, which can result in conflict. First, these differences could be motivated by the perception of how formal or informal this social media tool is used in the workplace. For example, Participant 16 described an unpleasant relationship using WhatsApp in the workplace because she

perceives it facilitates *messiness* in terms that colleagues use WhatsApp as the only tool to formalize any query, especially when requesting it extemporaneously or without proper planning (no anticipation). According to this participant, people assume that sending WhatsApp messages could be a formal request, leading to problems when the receiver does not perceive them the same way and, in some cases, does not even read the message.

In this duality, top officials tend to agree that WhatsApp is more convenient for transmitting information faster, whereas other tools, like institutional emails, have a slower information transmission mechanism. For example, Participant 11 says: "*When you ask me where they can send me urgent documentation, I say: through WhatsApp rather than by email due to the agility of the information.*" However, they all agreed they preferred calling to texting when facing urgent matters.

In this scenario, WhatsApp and email complemented each other regarding the flow of information. First, participants agreed that emails work best for keeping track of performance, while WhatsApp messages are better for getting fast responses and transmitting information, as Participant 7 said: "*time then becomes a highly complex variable, and this highly complex variable can only be resolved instantly, and WhatsApp does that for you.*" This could be explained because most participants expressed that they were more alert to responding to WhatsApp messages than to emails. Eight participants said they even delegated their email access to a trustworthy subordinate. Here, most subjects commented that they used WhatsApp to communicate or give a "heads up" of what the recipient will get in the email, facilitating collaboration and the flow of information for better decision-making. For example, Participant 28 stated, "*for agility,*

for example, what I do, something I do many times, I do an official memo, I scan it, and I send it to the person through the chat so they can read it.”

5.4. Transmitting information: Implications for transparency and accountability.

All of the participants do not perceive WhatsApp to increase transparency directly; instead, they perceive it as a tool to transmit information. In this scenario, a few of them commented that group chats were valuable for sharing official information downwards and spreading their decisions among their teams (*“It is great! I send the information out there, and all of us who are there are part of the knowledge of that information”* Participant 32).

There is confusion about whether, officially, WhatsApp is an informal or formal tool. Most participants perceived WhatsApp as an informal tool. But, due to this ambiguity, some participants stated that they pretended it was a formal tool and acted accordingly. On the other hand, when treated informally, participants described using formal tools, like emails, for official communications. In this matter, participants used formal tools to keep track of their processes and be responsive to accountability processes. In sum, top officials would like the assurance that WhatsApp could be used to trace their procedures, acting as a formal accountability tool. Otherwise, they would keep using the other formal tools when needed.

Because of this duality, participants had different perspectives on keeping track of their records for accountability processes. For instance, only two subjects knew that the central government had defined some procedures for using WhatsApp as a formal tool. In this scenario, email and internal memos seemed to prevail among top officials as the formal tool to keep track of performance, even though they mentioned that WhatsApp

messages could be used as proof of performance and that they should be cautious with the information they shared through WhatsApp. For instance, Participant 12 commented: *“What is not in an email does not exist, WhatsApp is very volatile, WhatsApp is fast but volatile; email no, email is a bit slower but not as volatile for me.”*

There were discrepancies concerning the sort of information that participants shared through WhatsApp and when they needed to use a more formal tool to keep track of their decisions. No specific situation or ruling determines when to use a different tool besides WhatsApp. However, except for one participant, they all seemed confident that they knew well when they needed to use a different mechanism to keep track of their managerial performance (even participants new in the public sector were confident about it). Participant 28 expressed it clearly: *“So, there are things that, no matter what, I must leave a trace in an email, and that I have to leave a trace in an internal memo.”* Also, participants expressed that keeping evidence of their performance and decisions was important when responding to oversight organizations because, according to some of them, WhatsApp does not guarantee proof of performance to the evaluators (*“... a WhatsApp chat is not a support that gives me the integrity that I seek before an oversight organization...”* Participant 16).

Similarly, as a blame avoidance mechanism, participants felt confident expressing that sensitive conversations should not be discussed via WhatsApp and that they should address them either in person or through a phone call (three subjects even said that due to privacy violation potentials, they only make phone calls using WhatsApp because it is harder to record). In this matter, participants perceived that any WhatsApp message they sent could not prevent someone from taking a screenshot of it and manipulating its

content to cause some harm. One participant even suggested that leaked voice messages could cause more harm than text messages because people could alter the voice message.

For instance, two participants commented:

“[...] one is taking great care of oneself all the time, how one speaks, how one says things; then, finally, WhatsApp allows you to leave evidence of things through screenshots, forwarding messages... So, issues of great confidentiality, important issues, I try never to deal with them on WhatsApp” [Participant 5].
 “I am very, very careful with what I write to the teams. This is... well, I do not give or send value judgments or, in one way or another, information that anyone can copy or paste or take a screenshot of. True, true... So, those issues, when I feel that there is something that can be leaked and that can cause difficulties, I clearly discuss that in person” [Participant 24].

Finally, participants felt confident that their messages are work-related and should not cause any trouble in case of a leak. In addition, their responses seemed to address a desired behavior to act ethically when using WhatsApp. Even Participant 14 commented that this behavior contributed to acting more transparent toward her employees, considering their constant scrutiny when interacting through WhatsApp.

6. Discussion

Information and Communication Technologies (ICTs) and, more specifically, the use of social media, like WhatsApp, in government settings are developing worldwide; this chapter revised how public managers use WhatsApp as a managerial tool for internal processes. Previous research has suggested that more studies are needed to understand better the use of ICTs in the workplace from an individual perspective. Thus, this study revised how WhatsApp affects public managers' practices by conducting semi-structured interviews with top officials in a medium-sized municipality in Colombia. A summary of the results can be found in Table 3.2.

Table 3.2. Categorical findings

Category	Idea
Clear aspects of using WhatsApp in the workplace	Favors transition from paper-based in-person to virtual-based interactions
	Facilitates a “virtual presence” in the office
	A managerial tool that permits quick transmission of information
	Sensitive conversations should not be discussed on WhatsApp
Unclear aspects of using WhatsApp in the workplace	Preference for emails (formal tool) when dealing with transparency and accountability requirements
	Ambiguity to assess it as a formal or informal tool
	Potential loss of work-life balance
	Uncertainty in determining how WhatsApp complements other tools

Results show that introducing WhatsApp in the workplace has altered day-to-day operations in public organizations. The COVID-19 pandemic accelerated the use of ICTs in the workplace. It proved necessary to accelerate an organizational culture transition from paper-based in-person practices to a virtual-based scenario in which WhatsApp became the protagonist compared to other tools. For instance, subjects stated that a positive feature of being online related to the possibility of remote work and virtual interaction. This way, organizational leaders can manage despite being physically present or not at the office, similar to what Sonnentag (2018) or Bittman, Brown & Wajcman (2009) expressed in their studies. Also, as Sonnentag (2018) suggested, some subjects manifested that WhatsApp favored multitasking in the workplace. However, managers expressed concerns regarding the excessive connectivity demands that the tool imposed, eventually blurring the work-life balance. Subjects called for clear delimitation using WhatsApp, considering that they also use it for private conversations. Future studies could revise work-life balance implications of using WhatsApp for work purposes.

The analysis found that a lack of consensus on how public managers should formally use WhatsApp is consistent with the second stage described in Mergel's and Bretschneider's ICT adoption model. "Chaos" is represented in the many mechanisms, different than WhatsApp, public managers use to keep records of their performance for accountability issues. As expected in the bottom-up model, organizational leaders called for precise regulation on WhatsApp use. In the meantime, they complement its use with emails and internal memos for tracking purposes. The results are also consistent with Rajendran and colleagues' (2019) study, where managers use WhatsApp in the workplace despite not being officially accepted as a formal tool. However, using formal tools when needed could be a blame avoidance mechanism trying not to speculate with WhatsApp use.

From a managerial perspective, managers perceive WhatsApp as a tool and not an end, similar to what Christensen & Lægreid (2020) suggested. The results did not find conclusive evidence of micromanagement practices. Still, WhatsApp is preferred for the fast transmission of information, quick responses, and better collaboration between units, which could improve decision-making processes in the workplace. However, no information suggested that better decisions were taken because of WhatsApp use. In this scenario, managers prefer WhatsApp when there is a need for immediate and real-time discussions, as previous research has suggested (Rajendran et al., 2019; Shih-Ming et al., 2008).

Results did not find WhatsApp to be an essential factor that contributes to more transparency in the workplace. However, it is being used to transmit information internally. Moreover, managers expressed concerns about how the transmission of

information could harm them in the future and how they had to be cautious when interacting through WhatsApp. The use that managers have given to WhatsApp suggests an interest in process transparency (Löfgren, 2020; Sunstein, 2018). Nevertheless, these findings did not observe whether managers limit employees' discretion by manipulating transparency procedures.

The lack of consensus on whether WhatsApp is an informal or formal tool has created challenges to securing, storing, and keeping track of managerial decisions and performance. Results show that managers are confident about how they use this tool, but there needs to be a consensus on how to use it. Respondents had different perspectives on keeping track of their records for accountability processes. As Cameron and Webster (2005) argued in their early study, results show a preference for a paper trail for accountability purposes despite the benefits of instant messaging. More importantly, WhatsApp has created an adversarial and/or complimentary relationship with using emails (like Rajendran et al. (2019) stated) that still needs further analysis.

Results contributed to a better understanding of managerial accountability (Bovens et al., 2014), and its use for monitoring subordinates suggests a relational accountability (Busuocic & Lodge, 2017); for instance, managers mentioned how they strategically contact their employees individually or through a group chat. As a blame avoidance mechanism, managers expressed that there were specific situations that they did not discuss through WhatsApp, anticipating possible leaks or misunderstandings. In this matter, it is clear that despite being a tool that managers use intensively daily, they are cautious about the type of conversations they have through WhatsApp to avoid getting in trouble.

7. Conclusions

This essay revised how public managers use WhatsApp as a managerial tool for internal processes by conducting semi-structured interviews with top officials in a medium-sized municipality in Colombia. This study shed light on how local managers adapted their processes during the pandemic to fully embrace the inclusion of Information and Communication Technologies into the workplace, specifically how they use WhatsApp. This instant messaging application is highly used in Latin American countries for work-related purposes.

Results showed that despite being widely used among public managers, there is no consensus on whether WhatsApp is a formal or informal work tool, having important accountability implications. Because of this discrepancy, managers described an adversarial and/or complimentary relationship between WhatsApp and the use of emails (an accepted formal tool) to keep track of their records. However, managers value WhatsApp as an essential managerial tool used in the workplace to increase performance and improve productivity. Thus, authorities should regularize WhatsApp use in the workplace by establishing clear procedures for use.

The qualitative data collection was in Palmira, a medium-sized municipality in southwest Colombia. Its unique characteristics represent some risks when generalizing these results to other contexts; however, the practice of using social media tools in the workplace is expanding everywhere, and governments worldwide are dealing with these increasing practices. These results could motivate other scholars to revise the implications for public servants of introducing these ICT in the workplace.

Future studies should better look at how these new work arrangements are increasing micromanagement practices (which is also a limitation of the current study) that could affect employees' discretion. For example, future studies could revise the specific mechanisms that favor or not the employee-supervisor relationship when using these technologies. In general, a better understanding of digital transformation could lead to a better analysis of e-leadership mechanisms. Similarly, scholars need to address the work-life balance implications of introducing this technology in the workplace, how it alters their managerial skills when contacting their employees virtually, and how they send adequate messages. Interestingly, further studies should also revise the use of other tools that are integrated into employees' smartphones and could facilitate work operations (ex., Google drive, calendar, Trello).

4. Public servants are affected when using WhatsApp for work purposes. An experiment

1. Introduction

New Information and Communication Technologies (ICTs), such as instant messaging applications, provide a more dynamic and interconnected workplace (Feldman et al., 2020). ICTs have been praised as essential organizational elements (Brown et al., 2014; Ahn, 2011), and thus, public servants use them, even if they are not well prepared (Camarena & Fusi, 2022). Public servants cope with the newest ICTs for work purposes, which refers to changing their attitudes and behaviors to tolerate using the new technology (Breit et al., 2021). Specifically, some specific communication technologies could positively and negatively affect employees' perceptions (Diaz et al., 2012; Benlian, 2020; Roman, 2015).

Coping with ICTs creates pressure on public servants (Fleischer & Wanckel, 2023; Tarafdar et al., 2007), adding to the already stressful environment that public servants face daily (Camarena & Fusi, 2022). In this matter, scholarship has defined the appropriation of ICTs as digital transformation, which affects organizational processes (Eom & Lee, 2022; Mergel et al., 2019). In particular, the use of WhatsApp (an instant messaging application) alters internal communications because it makes it easier to transmit information (Giurge & Bohns, 2021). Moreover, WhatsApp is used in the workplace despite needing to be formalized in many workplaces (Rajendran et al., 2019). This adds another tool to a workplace environment already saturated with multiple forms of communication (Garrett & Danziger, 2007). In this process, accountability mechanisms interact with the new technologies, and thus, employees also need to cope with these new dynamics.

Internal processes that affect using ICTs in the workplace can also be related to increased stress (Camarena & Fusi, 2022). In this situation, using new ICTs that have not been well-regulated (like WhatsApp) can affect employees' behaviors. Consequently, these difficulties that come from digital transformation processes, which are also related to formalization processes of the new technologies, could also be triggering public servants' stress. There is a need to analyze further how public servants cope with digital transformation (Mergel et al., 2019). Hence, this study addresses how public servants are affected when using WhatsApp for work purposes.

The following study discusses first the research on WhatsApp use for internal collaboration and stress. It will then describe the methodological approach to respond to the above research question. Next, it will present the findings from the quantitative approach and provide an overall perspective on how public servants get affected when using WhatsApp for work purposes. Finally, the study will highlight the most important findings and make some concluding remarks, including suggestions for expanding this research.

2. Theoretical framework

2.1. Instant messages in the workplace using WhatsApp

Information and Communication Technologies (ICTs) are constantly changing (Ragu-Nathan et al., 2008) and can be considered essential elements in today's organizations (Brown et al., 2014; Ahn, 2011). Scholarship has defined this appropriation of ICTs as digital transformation (Eom & Lee, 2022; Mergel et al., 2019). Digital transformation also means a change in organizational processes (Eom & Lee, 2022; Mergel et al., 2019), which could come with different challenges that need better

understanding (Mergel, 2013; Ingrams, 2015; Eom & Lee, 2022; Goldfinch et al., 2011). In particular, new ICTs can contribute to having more dynamic and interconnected workplace interactions (Feldman et al., 2019), but they could also negatively affect employees (Atanasoff & Venable, 2017; Benlian, 2020; Diaz et al., 2012). For instance, ICTs favored new workplace interactions during the COVID-19 pandemic (Chansukree et al., 2022) that are still in place (like virtual interactions). Thus, these new workplace interactions could be affected by instant messaging applications, such as WhatsApp.

The new ICTs make it easier to transmit information (Giurge & Bohns, 2021). In this matter, internal communications, which are all formal and informal interactions happening within organizations (Suh & Battaglio, 2021; Zainun et al., 2020), could benefit or not from using the newest tools like WhatsApp. In general, employees are using these new technologies, even if they are not prepared to deal with them (Camarena & Fusi, 2022). Thus, employees cope, which refers to changing their attitudes and behaviors to tolerate using the new technology (Breit et al., 2021). When revising the public sector research, Tummers and Rocco (2015) analyzed public employees' coping mechanisms when interacting with citizens, but the study of these attitudes in public sector internal communications is still short. There is a need to analyze further how public servants cope with digital transformation (Mergel et al., 2019).

Instant messaging applications (like WhatsApp, WeChat, or Google Hangout) facilitate internal collaboration because they enable the interchanging of short-near-synchronous messages between employees (Cameron & Webster, 2005; Garrett & Danziger, 2007; Lebbon & Sigurjónsson, 2016). Despite not being formalized in many workplaces, employees use them (Rajendran et al., 2019), adding another tool to a

workplace environment already saturated with multiple forms of communication (Garrett & Danziger, 2007). WhatsApp is the most popular social media instant message application (Fernández-Ardévol & Rosales, 2017; Terkan & Celebi, 2020; WhatsApp blog, 2022), except in North America (Fernández-Ardévol & Rosales, 2017).

WhatsApp's popularity is due to its easy way to interchange real-time messages to individuals and groups (Church & de Oliveira, 2013; Meyer et al., 2021; Nobre et al., 2020; Montag et al., 2015), needing only an internet connection or a data plan (Meyer et al., 2021; Montag et al., 2015; O'Hara et al., 2014; Sun, 2020). In particular, this application offers its users end-to-end encryption, protected backup, a desktop version, and disappearing messages, among other features (WhatsApp blog, 2022).

The popularity of instant messages in the workplace can complement or compete with work emails (Rajendran et al., 2019). In one way, employees prefer sending emails because of their asynchronous nature (Rosen et al., 2019; Giurge & Bohns, 2021; Brown et al., 2014; Byron, 2008), whereas the synchronous characteristic of instant messages could be used in other situations, like responding immediately to not-so-important issues (Lebbon & Sigurjónsson, 2016; Rajendran et al., 2019; Shih-Ming et al., 2008; Giurge & Bohns, 2021). In this matter, public employees should have clear criteria when deciding to use email or WhatsApp when communicating. Early studies on the use of emails in work settings concluded that their use could lead to the "informal formalization" of communications (Meijer, 2008). Similarly, its introduction meant a lower use of other forms of communication (Byron, 2008). Thus, as a new form of internal communication, WhatsApp could behave in similar ways as emails did when they were first introduced.

2.2. Individual effects of Information and Communication Technologies in the workplace

Public servants cope with the newest ICTs for work purposes. First, previous studies about email use have shown that these messages are disruptive to the receiver even if the sender says it is not urgent (Jackson et al., 2003; Giurge & Bohns, 2021). Thus, emails created a work dynamic where people need to respond very quickly to the message unless the message's sender clarifies it is not urgent (Giurge & Bohns, 2021). In addition, hierarchical pressures add to this urgency response culture (Giurge & Bohns, 2021). In consequence, employees could prioritize unimportant tasks because they perceive them as urgent (Zhu et al., 2018). Also, instant messages favor “real-time” interactions that trigger the need for immediate responses (Rajendran et al., 2019; Shih-Ming et al., 2008; Giurge & Bohns, 2021). The synchronous nature of WhatsApp could show similar attitudes, exacerbated by the belief that any message from a supervisor should be addressed immediately.

The sense of urgency due to the use of these ICTs is making employees spend extra time working because they have to respond to all the messages in addition to doing their regular work (Barley et al., 2011; Camarena & Fusi, 2022; Giurge & Bohns, 2021). This situation increases if people can work from virtual settings (Barley et al., 2011; Rosen et al., 2019; Camarena & Fusi, 2022). Thus, WhatsApp could increase public servants' workload. In consequence, ICTs facilitate a permanent connection with the office (Boswell & Olson-Buchanan, 2007; Feldman et al., 2019; Ingrams, 2015), creating a work dynamic where being a good employee means being constantly “on call” (Giurge & Bohns, 2021; Becker et al., 2021) even after work hours (Diaz et al., 2012; Boswell &

Olson-Buchanan, 2007). This way, employees can solve problems as soon as they arise (Diaz et al., 2012; Boswell & Olson-Buchanan, 2007). Moreover, instant messaging applications favor constant connectivity (Sonnetag, 2018; Bittman et al., 2009). Thus, WhatsApp could facilitate a permanent connection with the office.

The expectations that employees should always be available could be affecting work-life balance because the increased availability is blurring the boundaries between home and work (Becker et al., 2021; Tummers & Rocco, 2015; Giurge & Bohns, 2021; Boswell & Olson-Buchanan, 2007), affecting their well-being (Boswell & Olson-Buchanan, 2007; Diaz et al., 2012; Chansukree et al., 2022). In sum, the virtual relationships that ICTs brought to the workplace have affected employees, who could be having difficulties coping (Palumbo, 2020). Hence, WhatsApp could be invading public servants' personal life.

2.3. WhatsApp use and stress

Coping with ICTs creates pressure on public servants (Fleischer & Wanckel, 2023; Tarafdar et al., 2007), adding to the already stressful environment that public servants face daily (Camarena & Fusi, 2022). In this context, I define stress as a cognitive manifestation when people anticipate they will not respond adequately to a specific situation (Tarafdar et al., 2007). Thus, scholars have defined technostress as the stress generated using ICTs (Camarena & Fusi, 2022; Pflügner et al., 2021; Lee et al., 2014; Tarafdar et al., 2007). Moreover, evidence suggests that technostress is greater when ICTs are used for work purposes (Camarena & Fusi, 2022). Consequently, technostress has been associated with negative organizational outcomes (Atanasoff & Venable, 2017; Camarena & Fusi, 2022; Tarafdar et al., 2007; Ragu-Nathan et al., 2008; Fleischer &

Wanckel, 2023). However, more studies in the public sector are needed (Camarena & Fusi, 2022; Atanasoff & Venable, 2017).

Scholars have identified specific conditions that trigger technostress (Tarafdar et al., 2011; Camarena & Fusi, 2022). As Tarafdar and colleagues (2011) and Pflügner and colleagues (2021) summarized it, technostress can be due to the following conditions: 1) techno-overload (the need to work more and faster); 2) techno-invasion (the possibility of being reached anytime and anywhere); 3) techno-complexity (technology can be overwhelming and difficult to learn); 4) techno-insecurity (losing a job because the impossibility to master the technology); 5) techno-uncertainty (evolving technology is forcing employees to a permanent adapting process). Prior studies have concluded that email use is associated with increased stress due to techno-overload and techno-invasion (Giurge & Bohns, 2021; Barley et al., 2011; Brown et al., 2014; Dawley & Anthony, 2003). Thus, WhatsApp use for work purposes could also be associated with techno-overload and techno-invasion.

Internal processes that affect ICTs use in the workplace can also be related to increased stress (Camarena & Fusi, 2022). For instance, accountability mechanisms interact with the new technologies, and thus, employees cope with these new dynamics. Consequently, these difficulties that come from digital transformation processes, which are also related to formalization processes of the new technologies, could also be triggering technostress.

Public employees are individually accountable because they have to justify their actions to somebody else (Bovens, 2007; 2010; Bovens et al., 2014; Han & Perry, 2020). Exposure to possible consequences of their actions affects their coping mechanisms with

these processes (Han & Perry, 2020; Schillemans, 2016). These coping mechanisms can mimic blame avoidance attitudes, where individuals minimize the blame for their actions (Hood, 2007; 2011) by, for example, strictly following the rules (Hood, 2011; Lupson & Partington, 2011). Thus, it is expected that in the presence of new tools like WhatsApp, public employees will comply with the established rules, avoiding any ambiguity (Borry et al., 2018).

The possibility of being held accountable could be a source of stress (Hall et al., 2017; Hall et al., 2006; Laird et al., 2009). In this situation, using new ICTs that have not been well-regulated (like WhatsApp) can affect employees' behaviors. For instance, when deciding which tool to use, the benefits of instant messages are not considered because individuals could prefer a paper trail to keep track of their work (Cameron & Webster, 2005), and emails work well for this purpose. Additionally, there are concerns about losing information on WhatsApp if the smartphone is damaged or stolen (Meyer et al., 2021). Consequently, public employees are expected to be more stressed about using WhatsApp if they know that their information has not been stored according to formal regulations.

3. Research design.

To probe the question of how public servants are affected when using WhatsApp for work purposes, I use an experiment embedded in a survey of a unique sample of public servants in Palmira, a medium-sized city in Colombia. As a native speaker, the instrument was conducted in Spanish, and I translated it into English for analysis. Regarding the context, the Colombian institutional arrangements grant different levels of autonomy to local governments for various policy areas, which could bring

implementation and management difficulties to public servants. In addition, recent initiatives have increased accountability efforts, especially regarding e-government and ICTs (Departamento Nacional de Planeación, 2010).

The COVID-19 pandemic forced Colombian public organizations to work remotely and use ICTs intensively (Presidencia de la República, 2020). Also, national authorities recommended that public servants use WhatsApp (or any other ICT tool) for work purposes (Función Pública, 2020). In this matter, Colombia recently enacted a “Disconnection Law” (Law 2191 of 2022) that delimited work-life balance by permitting public servants, depending on their responsibilities, not to be reached after work hours. Finally, recent rulings from the Colombian Supreme Court give WhatsApp an official status (López-González, 2021). Hence, it is pertinent to research about WhatsApp in this context.

Additionally, different situations in the late 1990s influenced Colombian authorities to freeze the civil service while increasing the number of contractors in the public sphere (Londoño et al., 2018; Sanabria-Pulido et al., 2019). Colombian public organizations must balance the presence of contractors and careerists with similar job descriptions. However, these two types of employees operate under different contractual regimes, complicating human resources administration. In practice, it is challenging to consolidate the number of contractors working in public organizations. This situation has created difficulty in estimating the actual size of Colombian public organizations (Sanabria-Pulido, 2015).

In particular, Palmira’s central government consists of 15 secretaries, 20 deputy secretaries, and eight "offices" directly accountable to the mayor's Office. This

administrative distribution is supported by a changing workforce that, as of June 2021, consisted of approximately 1,166 employees divided into 508 (44%) public employees, 51 (4%) freely appointed officials, and an estimated 607 (52%) contractors. This constitutes the sampling frame for the quantitative approach.

The survey and embedded experiment were launched in April 2023 and remained active for 20 days. The instrument was administered online to Palmira's public servants through Qualtrics online platform. In addition, municipal leaders authorized one person to act as a facilitator. This person contacted public servants virtually and in person and invited them to participate in the study. The link to the experiment was distributed through Palmira's WhatsApp groups as well as the official email. First, the Mayor introduced the study in a cabinet meeting, and the link was distributed through the cabinet's WhatsApp group. The facilitator contacted top officials individually and invited them to share the link on their departments' WhatsApp groups. To incentivize participation, the study gave, in a lottery, two bonuses of approximately \$110 each (500.000 Colombian Pesos) among the people that provided a contact email.

The risk of selection bias and, thus, the generalizability of the results is latent (Remler & Van Ryzin, 2022; Jilke & Van Ryzin, 2017), especially when using a facilitator to incentivize participation. First, individuals with a prior relationship with the facilitator could have been more willing to participate. Second, it was presumed that every public servant was included in a department's WhatsApp group. Third, public servants working remotely could have been less exposed to the promotion of the study. Fourth, it was presumed that everyone reads institutional emails. In the end, 531 participants participated in the study (response rate = 46%); the final sample size was 470

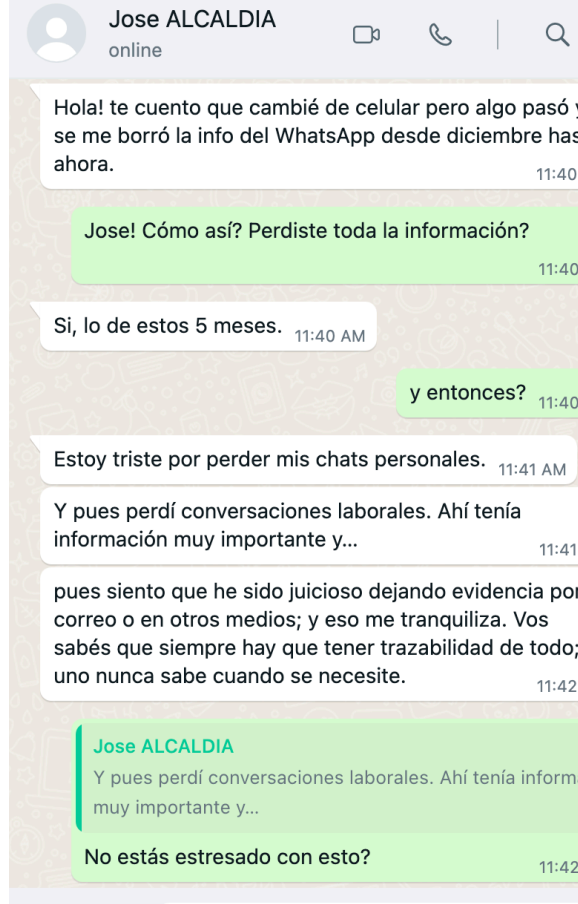
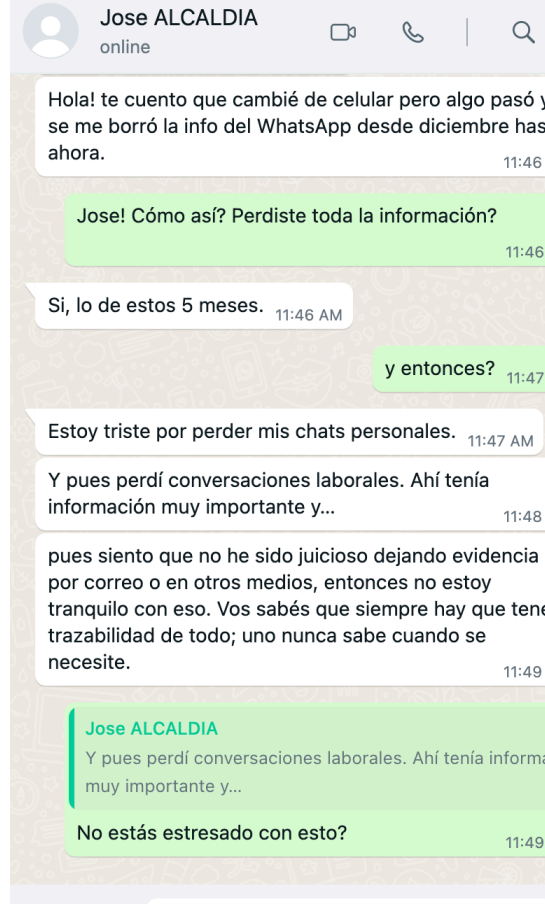
complete responses. In particular, the final sample consisted of 42% public employees, 6% freely appointed officials, and 52% contractors. Thus, despite the limitations, the final sample size showed similar proportions to the sampling frame.

3.1. Survey Experiment

I designed a simple vignette experiment on the use of WhatsApp. I wanted to provide a simple but realistic hypothetical scenario involving the possibility of losing WhatsApp data and its connection to stress levels. Thus, I designed a two-scenario experiment where participants were randomly exposed to a screenshot, observing a WhatsApp conversation between two colleagues. Specifically, the talk is about “Jose” telling his colleague that he lost his WhatsApp information when renewing his smartphone. The manipulation consists of whether “Jose” was diligent in using other tools to record evidence of his work, suggesting a difficulty in supporting future accountability processes.

Figure 4.1 Experimental design – Vignettes.

Situation A (Diligent)	Situation B (Not diligent)
<i>Jose: Hi! I got a new smartphone, but something happened and my WhatsApp info was deleted from December until now.</i>	<i>Jose: Hi! I got a new smartphone, but something happened and my WhatsApp info was deleted from December until now.</i>
<i>Colleague: Jose! How come? Did you lose all the information?</i>	<i>Colleague: Jose! How come? Did you lose all the information?</i>
<i>Jose: Yes, everything from these past 5 months.</i>	<i>Jose: Yes, everything from these past 5 months.</i>
<i>Colleague: and then?</i>	<i>Colleague: and then?</i>
<i>Jose: I'm sad about losing my personal chats...</i>	<i>Jose: I'm sad about losing my personal chats...</i>
<i>Jose: And I lost work conversations. Those chats had important information and...</i>	

Situation A (Diligent)	Situation B (Not diligent)
<p><i>Jose: I feel I have diligently left all the evidence by email or other means. That calms me down. You know that we need to leave evidence of everything we do, we never know when we'll need that info.</i></p> <p><i>Colleague: Are you stressed out about this? [Responding to this message: "And I lost work conversations. Those chats had important information but..."]</i></p>	<p><i>Jose: And I lost work conversations. Those chats had important information and...</i></p> <p><i>Jose: I feel I haven't diligently left all the evidence by email or other means. That doesn't calm me. You know that we need to leave evidence of everything we do, we never know when we'll need that info.</i></p> <p><i>Colleague: Are you stressed out about this? [Responding to this message: "And I lost work conversations. Those chats had important information and..."]</i></p>
	

The dependent variable is a single question where participants report how much they disagreed or agreed, on a scale from one to ten, with the following statement: “*Jose should be stressed out because he has lost important work chats.*” Public servants’ coping mechanisms when formalizing new technologies, such as WhatsApp, could be triggering stress-related attitudes. These attitudes could escalate more if public servants consider the possibility of being held accountable, especially if they are ambiguous on whether the ICTs have been well-regulated. In this scenario, I expect public employees to be more stressed about using WhatsApp if they know their information has not been stored according to formal regulations.

The survey experiment uses a random assignment of the two scenarios, where the two subgroups should be statistically equivalent (James et al., 2017). I tested for balance to check if the randomization was successful. Thus, I tested for balance on critical demographic characteristics: Age, sex, sector experience, type of contract, and time in the current position. Table 4.1. shows the chi-squared tests, probing that there were no differences across treatment groups, meaning that the sample is balanced.

Table 4.1 Balance of the study sample

Variable	Category	Diligent (235 observations)		Not Diligent (235 observations)		Test*	p-value
		Frequency	%	Frequency	%		
Age	18-28	41	17.45	38	16.17	1.3241 (4)	0.8570
	29-40	102	43.4	105	44.68		
	41-50	49	20.85	55	23.4		
	51-60	36	15.32	29	12.34		
	> 60	7	2.98	8	3.4		
Sex	Men	96	40.85	102	43.4	0.3142 (1)	0.5750
	Women	139	59.15	133	56.6		
Sector experience	No	84	35.74	83	35.32	0.0093 (1)	0.923
	Yes	151	64.26	152	64.68		

Time in position	< 6 months	35	14.89	35	14.89	2.0624 (3)	0.56
	6 to 12 months	27	11.49	18	7.66		
	1 to 3 years	81	34.47	87	37.02		
	> 3 years	92	39.15	95	40.43		
Type of contract	Contractor	127	54.04	116	49.36	1.4378 (3)	0.697
	Public employee	72	30.64	79	33.62		
	Free appointment and removal	11	4.68	15	6.38		
	Provisionality	25	10.64	25	10.64		

*Chi-squared (*df*)

4. Findings

This experiment represented a basic situation with only two scenarios; thus, an analysis of variance (ANOVA), a t-test, and even a simple OLS regression should provide the same results (Van Ryzin, 2020). In addition, given that the randomization was successful (balanced), there is no need to include covariates because their inclusion could increase statistical power artificially or even introduce unnecessary bias (James et al., 2017). Hence, Table 4.2. shows the analysis of variance (ANOVA) and a simple analysis of means with corresponding confidence intervals across treatment groups.

Table 4.2 ANOVA and analysis of means

Source	Analysis of variance			F	P-value
	SS	df	MS		
Between Groups	402.606	1	402.606	37.69	0.00
Within Groups	4999.243	468	10.682		
Total	5401.849	469	11.518		
Group	Mean	Std. Error	95% Confidence Interval		Difference*
			[Lower	Upper]	
Diligent	4.33	0.21	3.92	4.75	-1.85

Not Diligent	6.18	0.22	5.76	6.61
Number of Observations: Diligent (235); Not diligent (235)				
*mean (diligent) - mean (not diligent)				

Results from the analysis of variance (ANOVA) show statistically significant differences across the two treatment groups. Moreover, these results are significant at 99%. The second part of the table facilitates a better understanding of how different the two means from the outcome variables are. Here, the stress that “Jose” should have because of losing important work chats, given that he has been diligent in using other tools to record evidence of his work, is less than in a scenario where he was not diligent. In particular, being diligent represented a stress level of 4.33, whereas not being diligent showed a stress level of 6.18. The difference of 1.8 (it is negative due to the subtraction calculation) could be signaling a quantitative measure of how much stress is added when Jose was not diligent in saving his work.

In addition, the analysis of variance (ANOVA) assumes that the dependent variable has a normal distribution and homogeneous variance across the groups, the observations are independent and randomly assigned, and the sample size is large enough for reliability and accuracy. I tested the homogeneity of variance (Levene’s test), where the non-significant result means that the hypothesis that the two variances were equal could not be rejected. Additionally, a Shapiro-Wilk test for normality showed that the dependent variables do not have a normal distribution and could be problematic. In this scenario, I also calculated the non-parametric Kruskal-Wallis estimation, obtaining significant results (chi-squared: 34.050; p-value: 0.0001). Thus, the two treatment groups are still statistically different.

Table 4.3 Additional tests

Variable	Levene's Test (Equal variance)	Shapiro-Wilk (Normality)
Diligent	0.69 [0.41]	0.98 [0.002]
Not Diligent		0.98 [0.002]

Number of Observations: Diligent (235); Not diligent (235)
[p-value]

4.1. Robustness check

Considering that the survey experiment relies on an online platform where the outcome and treatment are administered in the same context, it could be difficult to observe if participants thoroughly read the treatment (Jilke & Van Ryzin, 2017). Consequently, I conducted a manipulation check, which could be essential for internal validity (Meier & Funk, 2017; Jilke & Van Ryzin, 2017; Oppenheimer et al., 2009). I checked if participants correctly responded if “Jose” was being diligent or not, according to their treatment. Hence, 110 participants failed the manipulation check. The new sample consisted of 190 observations for the scenario where “Jose” was diligent and 170 observations where he was not. In this new scenario, I conducted another balance of the new study sample (Table 4.4.), and the results were non-significant, meaning that the randomization was still balanced.

Table 4.4 Balance of the manipulated sample

Variable	Category	Diligent (190 observations)		Not Diligent (170 observations)		Test*	p-value
		Frequency	%	Frequency	%		
Age	18-28	33	17.37	30	17.65	0.4220 (4)	0.9810
	29-40	83	43.68	76	44.71		
	41-50	39	20.53	36	21.18		
	51-60	29	15.26	22	12.94		
	> 60	6	3.16	6	3.53		
Sex	Men	78	41.05	70	41.18	0.0006 (1)	0.9810
	Women	112	58.95	100	58.82		

Sector experience	No	67	35.26	62	36.47	0.0569 (1)	0.811
	Yes	123	64.74	108	63.53		
Time in position	< 6 months	25	13.16	24	14.12	2.0096 (3)	0.57
	6 to 12 months	23	12.11	13	7.65		
	1 to 3 years	66	34.74	63	37.06		
	> 3 years	76	40	70	41.18		
Type of contract	Contractor	103	54.21	85	50	2.6083 (3)	0.456
	Public employee	56	29.47	60	35.29		
	Free appointment and removal	7	3.68	9	5.29		
	Provisionality	24	12.63	16	9.41		

*Chi-squared (*df*)

In addition, Table 4.5. shows the new analysis of variance (ANOVA), as well as the simple analysis of means with corresponding confidence intervals across treatment groups for the manipulated sample. Again, results show a statistically significant difference (the F-statistic even increased). Similarly, being diligent represented a stress level of 4.11, whereas not being diligent showed a stress level of 6.42. The difference of 2.32 is greater than the difference in the non-manipulated sample. These results still show that the stress that “Jose” should have because of losing important work chats, given that he has been diligent in using other tools to record evidence of his work, is less than in a scenario where he was not diligent.

Table 4.5 ANOVA and means analysis for the manipulated sample

Source	Analysis of variance			F	P-value
	SS	df	MS		
Between Groups	482.199	1	482.200	46.71	0.00
Within Groups	3695.401	358	10.322		

Total	4177.6	359	11.637		
Group	Mean	Std. Error	95% Confidence Interval		Difference*
			[Lower	Upper]	
Diligent	4.11	0.23	3.66	4.55	-2.32
Not Diligent	6.42	0.25	5.93	6.92	

Number of Observations: Diligent (190); Not diligent (170)

*mean (diligent) - mean (not diligent)

In addition, I also tested the homogeneity of variance (Levene's test), obtaining a non-significant result. In contrast, the Shapiro-Wilk test for normality also showed that the dependent variables of the manipulated sample did not have a normal distribution and could be problematic. In this scenario, I also conducted the non-parametric Kruskal-Wallis estimation, obtaining significant results (chi-squared: 39.758; p-value: 0.0001). Thus, the two treatment groups for the manipulated sample are still statistically different.

Table 4.6 Additional tests for the manipulated sample

Variable	Levene's Test (Equal variance)	Shapiro-Wilk (Normality)
Diligent	1.49 [0.22]	0.97 [0.002]
Not Diligent		0.98 [0.004]

Number of Observations: Diligent (190); Not diligent (170)

[p-value]

5. Discussion

This study tested how public servants are affected when using WhatsApp for work purposes. I presented a simple but realistic hypothetical scenario involving the possibility of losing WhatsApp data and its connection to stress levels. The experiment consisted of a WhatsApp conversation (presented as a screenshot) that measured the perceived stress when WhatsApp information was lost, given whether the character had

been diligent when securing the information with more formal tools (suggesting difficulty in supporting future accountability processes). I expected public employees to be more stressed if they knew their data was not stored according to formal regulations.

The significant differences between the two treatments (even after controlling for manipulation checks) confirmed the expected results. Participants expressed that more stress should be perceived when losing WhatsApp work information, given that the character (“Jose”) had not diligently kept track of his work. These results could signal that WhatsApp is a source of stress when used for work purposes. Moreover, these results show that in the presence of new tools like WhatsApp, public employees will comply with the established rules, avoiding ambiguity (Borry et al., 2018). Thus, the more stress expressed when the character was not diligent could reflect an interest in complying with existing rulings, which relates to established and more formal tools.

It is helpful to complement the discussion by referring to participants' perceptions about using WhatsApp, ignoring the treatment group differences. These descriptive data, which come from the survey distributed along with the experiment, contribute to a better understanding of the experimental results. Table 4.7. presents some results concerning the perceptions of WhatsApp as a tool for work and employees' attitudes when using this tool.

First, regarding perceptions of WhatsApp as a tool for work, participants agreed that WhatsApp helps to keep track of work, supporting its use as an official tool in the workplace. Despite its recognition as an official tool, participants heavily agreed that WhatsApp is an informal tool. Moreover, this apparent ambiguity of being official but informal is supported when, overall, participants were unclear about when to use

WhatsApp compared to other tools. These could be symptoms that WhatsApp, a new form of internal communication, could represent an “informal formalization” (Meijer, 2008) of internal communications.

Table 4.7. Additional descriptive statistics

Category	Variable	Mean*	St. Deviation
WhatsApp as a tool for work	WhatsApp work conversations keep track of work and can be counted as evidence	6.82	3.25
	I am clear when I must use other work tools different than WhatsApp (e.g. email)	4.46	3.7
	WhatsApp is an informal tool for work	7.77	2.79
WhatsApp and employee's attitudes	I stress when my colleagues do not respond quickly to a work chat	5.11	2.85
	I feel that I have to respond immediately when my boss writes to me	7.99	2.69
	I feel that using WhatsApp for work purposes has invaded my personal life	6.11	3.26
	I have a larger workload because of using WhatsApp for work	5.22	3.32
	I respond to work chats outside work hours	7.42	3.04
	Overall, the number of work-related chats I receive during the day stresses me out	5.24	3.12

Number of observations: 470

*Range: 1-10

Regarding WhatsApp and employees' attitudes, respondents perceived that they need to respond immediately to their supervisor's messages, whereas they were ambivalent expressing impatience if their colleagues do not respond to a work chat. Knowing that instant message applications favor “real-time” interactions that trigger the need for immediate responses (Rajendran et al., 2019; Shih-Ming et al., 2008; Giurge & Bohns, 2021), these responses could be a symptom that they prioritize WhatsApp

messages differently, where any message from a supervisor should be addressed immediately.

However, respondents were ambivalent about commenting that WhatsApp has increased their workload. Thus, it is not clear that using this tool makes employees spend extra time working because they have to respond to all the messages in addition to doing their regular, as previous literature suggested (Barley et al., 2011; Camarena & Fusi, 2022; Giurge & Bohns, 2021). Also, respondents agreed that they respond to work chats outside work hours. This response could be a symptom that instant messaging applications favor constant connectivity (Sonnentag, 2018; Bittman et al., 2009) and facilitate a permanent connection with the office (Boswell & Olson-Buchanan, 2007; Feldman et al., 2019; Ingrams, 2015). Suggesting that employees should always be available could also affect work-life balance (Becker et al., 2021; Tummers & Rocco, 2015; Giurge & Bohns, 2021; Boswell & Olson-Buchanan, 2007). However, respondents slightly agreed that WhatsApp could be invading their personal life; thus, it is unclear whether their perceptions support the blurring between work and personal life due to WhatsApp.

Similarly, the survey connected the use of WhatsApp with some specific stressors, such as techno-invasion and techno-overload (Giurge & Bohns, 2021; Barley et al., 2011; Brown et al., 2014; Dawley & Anthony, 2003). First, the invasion of personal life when using WhatsApp for work purposes relates to techno-invasion, whereas having a larger workload because of using WhatsApp for work could be related to techno-overload. However, in both of these responses, participants did not show, on average, a clear preference for any of them. Thus, there are no symptoms that WhatsApp use for work

purposes could also be associated with techno-overload and techno-invasion. These results are connected with the ambivalent response about the stress generated due to the amount of WhatsApp messages.

Similarly, Table 4.8. describes some configurations that WhatsApp users can set. In this scenario, their responses could imply some coping mechanisms when using this tool. For instance, 64% of respondents commented that they had activated the “read confirmation” feature (blue checks) that permits the message's sender to know if the message was read or not. Contrarily, their responses to other settings, such as letting people know if the person is available (online status) or the time when the message was read, were more balanced because around half of them had these settings (47% and 54%, respectively). These settings could be associated with a coping mechanism to stress.

Also, 88% of respondents had not activated the “temporary message” setting, which permits eliminating WhatsApp conversations automatically after some time. In addition, 59% said they have a backup of their WhatsApp conversations. These could be signaling a coping mechanism where saving WhatsApp information matters, which is associated with blame avoidance behaviors.

Table 4.8 WhatsApp configuration

Variable	Category	Frequency	Percentage
Read confirmation	Yes	302	64.26
	No	157	33.4
	Do not know	11	2.34
Online status	Yes	221	47.02
	No	237	50.43
	Do not know	12	2.55
Temporary messages	Yes	32	6.81
	No	413	87.87

	Do not know	25	5.32
Message read	Yes	256	54.47
	No	183	38.94
	Do not know	31	6.6
Backup	Yes	278	59.15
	No	158	33.62
	Do not know	34	7.23

Number of observations: 470

6. Conclusions

Knowing that accountability mechanisms interact with new technologies, such as WhatsApp, employees need to cope with these new dynamics in the workplace. Consequently, these difficulties, which are also related to the formalization processes of the new technologies, could also be triggering public servants' stress. To better understand their coping mechanisms, I was interested in understanding how public servants are affected when using WhatsApp for work purposes.

I conducted an experiment embedded in a survey of a unique sample of public servants in Palmira, a medium-sized city in Colombia. An experiment facilitates understanding individual perceptions of participants around a certain topic; moreover, experiments on public servants are not very common (Li & Van Ryzin, 2017). On this occasion, I designed a simple but realistic hypothetical two-scenario experiment. Despite the realistic "screenshot" participants observed, this is a hypothetical scenario, and the results could not necessarily reflect authentic measures (Jilke & Van Ryzin, 2017; Meier & Funk, 2017). Future studies should revise different settings as an opportunity to increase both the internal and external validity of these findings.

This study found that public employees are more stressed about using WhatsApp if they know their information has not been stored according to formal regulations. In this scenario, descriptive statistics also showed that, on average, respondents were ambiguous about knowing when to use different tools to keep track of their work. Results show that the stress generated could be due to the processes behind the use of WhatsApp and not due to the use of the tool itself, suggesting that WhatsApp is a tool for work purposes. In consequence, it seems that despite experiencing an informal formalization of WhatsApp for work purposes, there could be doubts concerning its official status.

These results signal that WhatsApp is a source of stress when used for work purposes. Moreover, these results show that with new tools like WhatsApp, public employees prefer to comply with the established rules, avoiding ambiguity (Borry et al., 2018). Thus, the more stress when the character (“Jose”) was not diligent could reflect an interest in complying with existing rulings. In addition, the vignette suggested the possibility of being held accountable, which relates to the perceived level of stress (Hall et al., 2017; Hall et al., 2006; Laird et al., 2009). Hence, there is a connection between the use of WhatsApp and the possibility of being held accountable that future studies should keep revising.

Using new ICTs that have not been well-regulated (like WhatsApp) can affect employees' behaviors. For instance, the survey also showed great support for clearer guidelines on the use of WhatsApp. Hence, governments should revise the use of this tool for work purposes and make the necessary arrangements. As a starting point, governments could define to what extent the information shared through this tool will be considered official because it is already generating stress among its users. Additionally,

future studies should keep revising the coping mechanisms to reduce stress levels, as well as clearly identifying the moderators that increase stress when using the new technology. This way, governments would have better information to help regulate the use of this tool.

5. Conclusions

Integrating new ICTs into the workplace has altered work processes in public organizations, resulting in a more dynamic and interconnected workplace. In particular, WhatsApp, the instant messaging application, has altered internal communications because it makes it easier to transmit information, adding another tool to a workplace environment already saturated with multiple forms of communication. Moreover, bringing new technologies into the workplace pressures public servants to act accordingly, incentivizing coping mechanisms.

Considering the context of WhatsApp use in government settings, this dissertation addressed the broad question: How do public servants respond to digital transformation in the workplace? This dissertation investigated the use of WhatsApp for work-related purposes among public servants and their relationships between them. This is important because these new work arrangements permeate day-to-day work relations, despite being initially introduced as informal interactions, suggesting profound implications for human resource administration. For example, technologies such as instant messaging applications helped navigate the COVID-19 challenges while introducing new work arrangements characterized by virtual interactions. Yet, little is known about WhatsApp use in the public workplace.

I used a sequential mixed methods approach (qualitative-driven) to study a specific case in the less explored Latin American public sector organizations: the Municipality of Palmira (Colombia). Studying a specific case could raise concerns about external validity (Yin, 2018). But my analysis intended an analytical generalization of a specific phenomenon, which future studies should keep analyzing. Moreover, this topic

has not been addressed in the public sphere for which studying a specific case could help to gain important insights into understanding the phenomenon. Particularly, some characteristics make the city of Palmira a good fit for understanding better the use of WhatsApp for work purposes. First, WhatsApp is the most popular social media instant messaging application, except in North America (Fernández-Ardévol & Rosales, 2017). Thus, studying a Latin American municipality seemed appropriate.

In addition, its size could facilitate comparison with other municipalities. Palmira is a medium-sized city with approximately 350,000 inhabitants (the 20th largest city in Colombia). Palmira is a member of the newly-created Colombian Association of Medium-Sized Municipalities, which could cover 65 Colombian municipalities, representing 28% of the Colombian population (Asointermedias, 2022). Additionally, the city is a member of the Peace in Our Cities Network; it also won the 2022 UCLG Peace Prize. Recently, the Mayor participated in the first Cities Summit of the Americas in April 2023 (Office of Cooperation, 2023).

Moreover, The COVID-19 pandemic forced public organizations to work remotely. In particular, the Colombian Department of Civil Service recommended that public servants use WhatsApp, among other tools, to work (Función Pública, 2020). Recent rulings from the Colombian Supreme Courts have permitted WhatsApp messages to be included in legal processes when WhatsApp is used for work purposes, giving the instant messaging application an official status (López-González, 2021). Finally, Colombia enacted a “Disconnection Law” in 2022 (Law 2191 of 2022) that delimited work-life balance by permitting public servants, depending on their responsibilities, not

to be reached after work hours. These situations supported my selection of Palmira (Colombia) for the current study.

In particular, Chapter 2 analyzed public servants' coping mechanisms for using WhatsApp for internal processes by responding to the question: How are public servants integrating WhatsApp into internal work processes? Specifically, I conducted 24 in-depth semi-structured interviews to analyze the general coping mechanisms that public servants show when using WhatsApp for work purposes. In Chapter 3, I analyzed 31 in-depth semi-structured interviews to collect data from top officials. I examined public managers' adaptation processes to the new work dynamics when using WhatsApp for work purposes. This chapter answered the question: How are public managers using WhatsApp as a managerial tool for internal processes?

Chapter 4 recognized that using new ICTs that have not been well-regulated (like WhatsApp) can affect employees' behaviors. Thus, these difficulties that come from digital transformation processes, which are also related to the formalization processes of the new technologies, also trigger public servants' stress. This chapter is built after analyzing the findings from Chapters 2 and 3. Particularly, I used a quantitative approach to answer the question: How are public servants affected when using WhatsApp for work purposes? More specifically, I used an experiment embedded in a survey of a unique sample of 470 public servants in Palmira.

Overall, results confirmed that WhatsApp became the primary tool for internal communications during the COVID-19 pandemic and has remained as such. In this matter, public organizations are experiencing an informal formalization of WhatsApp for work purposes, but doubts concerning its official outreach remain. In the absence of clear

rulings about its use, individuals use WhatsApp differently, and their criterium for using this tool is mediated by their work experience, type of contract, job responsibilities, and sometimes, their age. In sum, WhatsApp contributes to depersonalizing workplace relationships, facilitates a culture of immediacy and urgency in workplace interactions, and favors more agile work when collaborating.

Public servants use WhatsApp to interchange information easily when performing simple tasks that require rapid responses (daily). Also, results showed that it was usual to receive multiple WhatsApp messages daily, although there were discrepancies when discussing the response speed to these messages. In general, participants agreed that any message from their supervisor must be considered prioritized. Interestingly, managers value WhatsApp as an essential managerial tool used in the workplace to increase performance and improve productivity. Results suggested that having a coordination role could incentivize a more intense use of WhatsApp, especially because their jobs usually involve multiple and interdepartmental interactions. Additionally, this tool creates new work relationships where hierarchical boundaries are disappearing.

Doubts about using WhatsApp have generated ambiguity about knowing when to use different tools to keep track of their work when revising transparency and/or accountability. Public servants expressed an adversarial and/or complimentary relationship between WhatsApp and using emails (an accepted formal tool) to keep track of their records. Simply, despite WhatsApp overshadowing other communication tools, public servants still use email as the official mechanism to keep track of their work. However, as a coping mechanism, public servants described a gradual formalization of WhatsApp conversations. A more thorough analysis is needed to understand better the

complemental or competitive interaction between WhatsApp and email. In sum, there is a connection between the use of WhatsApp and the possibility of being held accountable that future studies should keep revising.

In general, work practices affect the positive and negative perceptions of WhatsApp, generating stress among public servants. In this matter, the stress generated could be due to the processes behind the use of WhatsApp and not the use of the tool itself, inviting future research to investigate how internal processes integrate this technology. Particularly, when using new tools like WhatsApp, public servants prefer to comply with the established rules, avoiding ambiguity. This study found that public employees are more stressed about using WhatsApp if they know their information has not been stored according to formal regulations. From a different approach, WhatsApp allows permanent connectivity to the office (blurring work-life boundaries), which public servants could perceive positively and negatively.

WhatsApp has not been well-regulated, and it is affecting employees' behaviors. For instance, public servants showed great support for having clearer guidelines on the use of WhatsApp. Hence, governments should revise the use of this tool for work purposes and make the necessary arrangements. As a starting point, governments could define to what extent the information shared through this tool will be considered official and the implications of using it as such because it is already generating stress among its users. Additionally, human resources administration policies should be clear on defining work-life boundaries, especially because public servants are using their personal phones to comply with these new work dynamics.

Future research should better explore the implications of these new workplace interactions over specific organizational outcomes. For instance, future research could study how new workplace relationships affect public servants' motivation. In particular, scholars should keep researching the coping mechanisms to reduce stress levels, as well as clearly identifying the moderators that increase stress when using new technology. Similarly, scholars need to address the work-life balance implications of introducing this technology in the workplace. Interestingly, further studies should also revise the use of other tools integrated into employees' smartphones and could facilitate work operations (ex., Google Drive, calendar, Trello).

From a managerial perspective, future studies should better examine how these new work arrangements increase micromanagement practices that could affect employees' discretion. For example, future studies could study the specific mechanisms that favor or not the employee-supervisor relationship when using these technologies. In general, a better understanding of digital transformation could lead to a better analysis of e-leadership mechanisms and how it alters their managerial skills when contacting their employees virtually, and how they communicate adequately.

Definitely, the use of ICTs has favored flexible work arrangements, yet further studies should research the implications of changing the work environment, so WhatsApp could favor flexible work arrangements in ways that can meet employees' and organizations' needs. Moreover, a different approach must look at the use of WhatsApp and citizens, intergovernmental and intersectoral interactions. Finally, future studies should revise different settings as an opportunity to increase both the internal and external validity of these findings.

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Appendix

1. Appendix 1. Interview Protocol for Public Servants

Interviewee: [*Insert name of individual*] from [*Insert position*]

START OF INTERVIEW

Hi [*Insert name of individual*]!

Thank you for your willingness to participate in this research project. The purpose of this study is to examine how the use of social media among public servants affects organizational transparency and accountability. I am interested in revising the use of ICTs, and more specifically, the use of WhatsApp for work-related purposes among public servants and their relationships between them. These interactions may be having significant implications in the implementation of transparency and accountability in the workplace. With your help, I expect to contribute to human resource practices when using mobile phones, social media, WhatsApp, and else.

There are no right or wrong answers, or desirable or undesirable answers. So, I implore you to speak freely, openly and comfortably. If it is fine with you, I will tape and video record our conversation since it is hard for me to write down everything while giving you my undivided attention. It also allows me to remain respectful of your time by not constantly pausing to take extensive notes. Everything you say will remain confidential, meaning that only myself will be aware of your answers. Outside of my genuine interest in learning more, this is also a requirement for completion of my degree program.

Background

1. Please Introduce yourself.
 - a. What are your primary responsibilities? Please, describe your day-to-day.
 - i. How much time do you spend in your office? (At home?)
 - ii. Describe the time you spend in front of your computer?
 1. Do you have a laptop that you carry around?
 - i. How much time have you been in your current position?
 - b. What other experiences have you had in the public sector?
 - i. Briefly, how were/was that/those experience(s)?

Use of ICTs and social media

2. What ICT tools do you use? Which one do you use the most?
 - a. What social media do you use?
 - i. Do you use them at work? For work-related issues?
 - ii. How do you combine the use of social media for work purposes vs. private use?
3. How comfortable are you using your cellphone at work?
 - i. Describe the blocks/periods where you do not check your phone?

- ii. Do you access your email (personal and work), calendar and files through your phone? How often?
- b. What use do you give to WhatsApp?
 - i. How comfortable are you using this tool?
 - 1. How do you combine the use of WhatsApp for work purposes vs. private use?
 - 2. How do you manage the need to be online all the time?
 - ii. What routine do you have regarding WhatsApp use?
 - 1. Do you mute WhatsApp notifications?
 - a. For instance, do you go to bed without “clearing up” WhatsApp messages? What do you do? (Is it a distractor?)
 - b. Do you have the blue two-check sign activated?
 - c. Do you read but not respond to messages to avoid having the un-answered notification?
 - 2. How do you transmit your emotions through WhatsApp? (Do you send emojis and stickers?)
 - 3. How do you send voice messages? Or do you prefer calling/texting?
 - 4. What is your reaction when you are added to group chats?
 - 5. How do you react when people you do not know contact you through this tool?
 - iii. What concerns do you have when using it? What problems have you experienced?
 - 1. What emotions do the amount of WhatsApp chats cause on you?
 - a. Unanswered chats (un-responded vs. unsolved)
 - 2. How does the use of WhatsApp affect your work-life balance?

Social media use, transparency, and accountability

- 1. How are you using WhatsApp to report progress about your work?
 - a. How do you manage the need to communicate with your supervisor all the time?
 - i. How do you share information with your supervisor proactively?
 - ii. What kind of information do you need to share with your supervisor through WhatsApp?
 - c. How do you balance the use of WhatsApp and the need to report and keep evidence of your work? (Using other tools?)
 - i. What actions have you established in terms of accountability and generating evidence when interacting with oversight organizations?
 - ii. How do you decide whether to chat, call or write an email to communicate in the workplace?
 - iii. How do you respond to oversight organizations about the information you discussed through social media platforms?

- d. How much do you care about the information you share through WhatsApp platforms? And other social media platforms?
 - i. How do you address the possible breaches of information when sharing sensitive information through WhatsApp in the workplace?

Interactions in the workplace.

- 2. How has the use of WhatsApp changed the interactions in the workplace? Communications?
 - a. How more informal (or formal) is the use of WhatsApp compared to sending an email or making a phone call? (How comfortable do you feel when using each?)
 - i. Have you reduced face-to-face interactions because of WhatsApp?
 - ii. How do you start a conversation through WhatsApp?
 - 1. Do you change your tone depending on the subject of the conversation?
 - 2. Do you approach each person differently?
 - a. How do you approach your supervisor?
 - b. How do you specify the degree of urgency in your message?
 - i. When the receiver of your message does not respond immediately to your message, how do you feel? What if it is your supervisor?
 - c. Do you expect the receiver of the message to respond right away?
 - i. Do incoming messages have a disruptive effect on your work?
 - ii. How do you treat people that respond immediately vs. those that do not?
 - d. How do you interact outside work hours?
 - i. Do you send WhatsApp messages at night? Weekends? (work-related)
 - e. How would you describe the feeling when you receive a message from your supervisor? From the director?
 - i. Have you identified a specific time/period where the receiver of the message is more likely to respond? (Supervisor?)
 - ii. To what extent do you think your colleagues/supervisor expect a response from you right away? Do you expect the same from them?

Social media and culture

- 1. How does WhatsApp increase your autonomy? (Or not)
- 2. What changes do you foresee in the future regarding the use of social media platforms in the workplace?

Final Question

- 1. Is there anything else that you would like to add or discuss, pertaining to this study?

Closing Remarks

Thank you for your time and insight. I can assure you; it was instrumental in enhancing my understanding of your role as public manager.

END OF INTERVIEW

2. Appendix 2. Interview Protocol for Public Managers.

Interview Protocol for Public Managers

Name of Project: Determining public managers' attitudes when using social media (WhatsApp) in the workplace

Purpose: The study aims to understand transparency and accountability in the context of social media practices and the use of (ICTs) in government settings. More specifically, it examines how the use of social media among public servants affects organizational transparency and accountability. This study is relevant because it explores the use of ICTs for work-related purposes among public servants and their relationships between them. These interactions may be having significant implications in the implementation of transparency and accountability in the workplace.

Objectives

- To explore the use of ICTs for work-related purposes among public servants and their relationships between them.
- To examine how the use of social media among public servants affects organizational transparency and accountability
- To contribute to the literature on the less explored Latin American public sector organizations

Research Question:

- How do managers understand and use social media in the workplace?
 - How is social media use (WhatsApp) changing supervisor-employee workplace interactions?
 - How do they view its potential for enhancing transparency and accountability?
 - What concerns do they have or problems have they experienced?

Interviewee: [*Insert name of individual*] from [*Insert position*]

START OF INTERVIEW

Hi [*Insert name of individual*]!

Thank you for your willingness to participate in this research project. The purpose of this study is to examine how the use of social media among public servants affects organizational transparency and accountability. I am interested in revising the use of ICTs,

and more specifically, the use of WhatsApp for work-related purposes among public servants and their relationships between them. These interactions may be having significant implications in the implementation of transparency and accountability in the workplace. With your help, I expect to contribute to human resource practices when using mobile phones, social media, WhatsApp, and else.

There are no right or wrong answers, or desirable or undesirable answers. So, I implore you to speak freely, openly and comfortably. If it is fine with you, I will be tape and video recording our conversation since it is hard for me to write down everything while giving you my undivided attention. It also allows me to remain respectful of your time by not constantly pausing to take extensive notes. Everything you say will remain confidential, meaning that only myself will be aware of your answers. Outside of my genuine interest in learning more, this is also a requirement for completion of my degree program.

Background

4. Please Introduce yourself.
 - a. What are your primary responsibilities? Please describe your day-to-day.
 - i. How much time do you spend in your office?
 - ii. Describe the time you spend in front of your computer?
 1. Do you have a laptop that you carry around?
 - ii. How much time have you been in your current position?
 - b. What other experiences have you had in a governmental leadership position?
 - i. Briefly, How were/was that/those experience(s)?

Use of ICTs and social media

5. What ICT tools do you use? Which one do you use the most?
 - a. Why this/these?
 - b. Do you use social media? Which one?
 - i. Do you use them at work? For work-related issues?
 - ii. How do you combine the use of social media for work purposes vs. private use?
6. How comfortable are you using your cellphone at work?
 - i. Do you have blocks/periods where you do not check your phone? Please explain.
 - ii. Do you have a different cell phone number for work?
 - iii. Do you access your email (personal and work), calendar and files through your phone? How often?
 - b. What use do you give to WhatsApp?
 - i. How comfortable are you using this tool?
 1. How do you combine the use of WhatsApp for work purposes vs. private use?
 - ii. What routine do you have regarding WhatsApp use?
 1. Do you mute WhatsApp notifications?

- a. For instance, do you go to bed without “clearing up” WhatsApp messages? What do you do?
- b. Do you have the blue two-check sign activated?
- c. Do you read but not respond to messages to avoid having the un-answered notification?
2. How do you send emojis and stickers?
3. How do you send voice messages? Or do you prefer calling/texting?
4. What is your reaction when you are added to group chats?
5. How do you react when people you do not know contact you through this tool?
- iii. What concerns do you have when using it? What problems have you experienced?
 1. What emotions do the amount of WhatsApp chats cause on you?
 - a. Unanswered chats (un-responded vs. unsolved)
 2. To what extent do you think your colleagues/subordinates expect a response from you right away? Do you expect the same from them?

Social media use, transparency, and accountability

3. How are you using WhatsApp to hold employees accountable for their work?
 - a. How are you tracking employees’ performance through WhatsApp?
 - i. How do you manage the need to receive information all the time from your subordinates?
 1. How do you manage your subordinates to share information proactively?
 2. What kind of information do you expect your employees to share with you using social media?
 - c. How has the use of WhatsApp made the organization more transparent? To employees?
 - i. How do you communicate decisions using WhatsApp?
 - d. How do you balance the use of WhatsApp and the need to report and keep evidence of your decisions?
 - i. What actions have you established with your team in using this tool in terms of accountability when interacting with oversight organizations?
 - ii. How do you decide whether to chat, call or write an email to communicate in the workplace?
 - iii. How do you respond to oversight organizations about the information you discussed through social media platforms?
 1. Do you have pending investigations from oversight organizations? Have you had in the past?
 - e. How much do you care about the information you share with your subordinates through WhatsApp platforms? And other social media platforms?

- i. How do you address the possible breaches of information when sharing sensitive information through WhatsApp in the workplace?

Interactions with employees.

- 4. How has the use of WhatsApp changed the interactions with your employees? Communications?
 - a. How more informal (or formal) is the use of WhatsApp compared to sending an email or making a phone call?
 - i. Have you reduced face to face interactions because of WhatsApp?
 - ii. How do you start a conversation through WhatsApp?
 - 1. Do you change your tone depending on the subject of the conversation?
 - 2. Do you approach each employee differently?
 - b. How do you specify the degree of urgency in your message?
 - i. When your subordinates do not respond immediately to your message, how do you feel?
 - c. Do you expect the receiver of the message to respond right away?
 - i. How do you manage people that respond immediately vs. those that do not?
 - d. How do you contact employees outside work-hours?
 - i. Do you send WhatsApp messages at night? Weekends?
 - e. How do you motivate your employees through WhatsApp?
 - i. How do you provide feedback?
 - 1. Group chats or individual chats? Or in person.

Social media and culture

- 5. How has the use of social media made it easier to adopt a culture supporting ICTs?
 - a. How do you manage employees that are reluctant to use WhatsApp?
- 6. What changes do you foresee in the future regarding the use of social media platforms in the workplace?
 - a. How do you think your managerial practices have changed due to the use of social media? And WhatsApp?
 - b. How do you think your managerial style would change in a post-pandemic scenario?

Final Question

- 2. Is there anything else that you would like to add or discuss, pertaining to this study?

Closing Remarks

Thank you for your time and insight. I can assure you; it was instrumental in enhancing my understanding of your role as public manager.

END OF INTERVIEW

3. Appendix 3. Survey and vignette experiment protocol

Survey and vignette experiment protocol

Project Name: Public servants' behaviors regarding the use of WhatsApp at work

Principal Investigator: Mauricio Astudillo Rodas, PhD Candidate, School of Public Affairs and Administration, Rutgers University-Newark (United States).

Purpose: To understand how public servants use WhatsApp in the workplace. More specifically, to examine how public servants adapt to this technology when keeping track of information. WhatsApp is changing workplace interactions and has implications for organizational processes.

Goals

- Explore the use of ICT for work purposes among public servants and their relationships between them.
- Examine how the use of social networks among public servants affects organizational processes, such as transparency and accountability.
- Add to the literature on public sector organizations in the less explored Latin American context.
- Contribute to knowledge and practice of workplace relationships in public organizations.

Research questions:

How do public servants understand and use WhatsApp in the workplace?

- What are public servants' attitudes toward using WhatsApp at work?
- What concerns or problems have public servants experienced when using this tool?
- How do public servants cope with losing (or the possibility of) WhatsApp information?

START OF THE QUESTIONNAIRE

This short questionnaire tries to gather your perception about the use of WhatsApp for work. Please base your answers on how you use this tool in a work context. Remember, your answers are anonymous, I ask for the greatest degree of sincerity. **If you are not currently employed by the Municipality of Palmira, please do not answer this questionnaire.**

- Section I: About the use of WhatsApp

On a scale from 1 to 10, where 1 is TOTALLY DISAGREE and 10 is TOTALLY AGREE, please indicate how much you agree or disagree with the following statements...

1. WhatsApp allows me to work in a more agile way
2. WhatsApp makes it easy to communicate with my colleagues
3. WhatsApp has favored collaborative work with other departments
4. WhatsApp helps the quick transmission of official information within the organization
5. WhatsApp contributes to transparency within the organization.
6. WhatsApp work conversations keep track of work and can be counted as evidence
7. I am clear when I must use other work tools different than WhatsApp (eg email).
8. I have used WhatsApp conversations (eg, screenshots) to respond to formal requirements (eg, FOI-requests, oversight control agencies, internal reports).
9. WhatsApp is an informal tool for work.
10. Guidelines are needed on the use of WhatsApp in the office

- **Section II: About how I talk through WhatsApp**

On a scale from 1 to 10, where 1 is TOTALLY DISAGREE and 10 is TOTALLY AGREE, please indicate how much you agree or disagree with the following statements...

11. I feel stressed when my colleagues don't respond quickly to a work chat
12. I feel that I have to respond immediately when my boss writes to me
13. I use stickers and/or emojis in my work chats
14. I feel that using WhatsApp for work purposes invades my personal life
15. I have a larger workload because of using WhatsApp for work
16. My work requires me always to pay attention to WhatsApp
17. I respond to work chats outside work hours
18. Overall, the number of work-related chats I receive during the day stresses me out

- **Section III: About WhatsApp settings**

Indicate how you have configured WhatsApp according to the following response options

- i. *Yes*
- ii. *No*
- iii. *I didn't know you could do this*

19. I have the “read confirmation activated” [*blue checks*]
20. My contacts can see my last connection and if I'm online
21. My messages automatically disappear after a while [temporary messages]
22. People can see the time the message was read
23. I save/store WhatsApp work conversations [*backup*]

- **Section IV: Vignette**

Please review the following WhatsApp conversation carefully, the following questions will be based on what is presented in the image

Situation A (Diligent)	Situation B (Not diligent)
<p><i>Jose: Hi! I got a new smartphone, but something happened and my WhatsApp info was deleted from December until now.</i></p> <p><i>Colleague: Jose! How come? Did you lose all the information?</i></p> <p><i>Jose: Yes, everything from these past 5 months.</i></p> <p><i>Colleague: and then?</i></p> <p><i>Jose: I'm sad about losing my personal chats...</i></p> <p><i>Jose: And I lost work conversations. Those chats had important information and...</i></p> <p><i>Jose: I feel I have diligently left all the evidence by email or other means. That calms me down. You know that we need to leave evidence of everything we do, we never know when we'll need that info.</i></p> <p><i>Colleague: Are you stressed out about this? [Responding to this message: "And I lost work conversations. Those chats had important information but..."]</i></p>	<p><i>Jose: Hi! I got a new smartphone, but something happened and my WhatsApp info was deleted from December until now.</i></p> <p><i>Colleague: Jose! How come? Did you lose all the information?</i></p> <p><i>Jose: Yes, everything from these past 5 months.</i></p> <p><i>Colleague: and then?</i></p> <p><i>Jose: I'm sad about losing my personal chats...</i></p> <p><i>Jose: And I lost work conversations. Those chats had important information and...</i></p> <p><i>Jose: I feel I haven't diligently left all the evidence by email or other means. That doesn't calm me. You know that we need to leave evidence of everything we do, we never know when we'll need that info.</i></p> <p><i>Colleague: Are you stressed out about this? [Responding to this message: "And I lost work conversations. Those chats had important information and..."]</i></p>



After viewing the image, please answer the following questions:

On a scale from 1 to 10, where 1 is **TOTALLY DISAGREE** and 10 is **TOTALLY AGREE**, please indicate how much you agree or disagree with the following statements...

24. Jose should be stressed out because he has lost important work chats.
25. From the previous conversation, does Jose feel he has been diligent at his work?
 - a. Yes
 - b. No
 - c. Jose does not know

• **Section V: Control questions**

26. What type of relationship or contract do you currently have with the Palmira Mayor's Office?
 - a. Administrative career
 - b. Free appointment and removal
 - c. provisionality
 - d. fixed period
 - e. Temporary
 - f. official worker

- g. provision of services
27. Specifically, I am
- a. Executive
 - b. Adviser
 - c. Professional
 - d. Technical
 - e. assistance
 - f. Official Employee
- Provision of services:
- g. Management support
 - h. Professional
 - i. Specialized Professional
28. Sex
- a. Man
 - b. Women
 - c. Other
29. Time at your current position?
- a. less than 6 months
 - b. from 6 to 12 months
 - c. from 1 to 3 years
 - d. more than 3 years
30. Prior to your current position, did you have work experience in the public sector?
- a. Yes
 - b. No
 - c. Don't know/Don't want to answer
31. How old are you?
- a. _____
32. What is the highest level of education you have completed?
- a. None
 - b. Preschool or Elementary (Pre-K to 5)
 - c. Middle school (6 – 9)
 - d. High school (10 – 13)
 - e. Technical
 - f. Technological
 - g. College degree
 - h. Specialization
 - i. Master's degree
 - j. Doctorate
33. During the last two months, my modality of work has been mainly
- a. In person (I attend the office or usual place of work)
 - b. Remote (Work at home, telecommuting)

End of the Questionnaire

Additional note: If you wish to participate in the lottery for one of the TWO bonuses of five hundred thousand Colombian pesos (\$500,000) each, please provide an email address where you can be contacted if you win:

Contact email: _____

