

Chapter

Media Synchronicity Effects on Telecommuters' Working Experience

Gabriel Almeida Kilson and Patrícia Tavares

Abstract

The widespread adoption of work from home has ignited a critical debate surrounding the necessity of in-office attendance and its influence on organizational performance. A central concern is that reduced face-to-face interaction might impede internal communication and overall effectiveness. Drawing on Media Synchronicity Theory, this chapter explores how employees experience media synchronicity in relation to shared understanding, contribution visibility, and performance evaluation. To investigate these experiences, we adopted a phenomenological approach, conducting online interviews with full-time telecommuters across various professional settings. Our findings challenge the conventional view, demonstrating that telecommuting does not inherently hinder complex discussions. Instead, telecommuters strategically select media options based on the communication context, enabling them to achieve high-quality communication. We further highlight the limitations of relying solely on quantitative metrics for assessing performance in highly interactive, non-repetitive roles, advocating for regular, synchronous communication between employees and managers. This chapter concludes with practical, managerial implications for optimizing internal communication and informing telecommuting policies.

Keywords: telecommuting, media synchronicity theory, internal communication, shared understanding, performance evaluation

1. Introduction

The post-COVID-19 world presents a fascinating dichotomy: a strong employee preference for flexible work arrangements [1] directly clashes with a growing executive desire for a return to traditional office settings at major companies like Amazon, Disney, JPMorgan, and Zoom [2]. This fundamental misalignment is not merely a matter of preference; it creates considerable uncertainty for organizations struggling to maintain productivity and foster a cohesive workforce. It compels us to ask: Is in-office attendance truly indispensable for achieving positive organizational performance? We argue that addressing this pivotal question requires a nuanced

exploration of employees' internal communication experiences in telecommuting environments—a critical area still largely overlooked in academic discourse.

Despite the widespread use of Information and Communication Technologies (ICTs) in daily work, ongoing concerns persist that the lack of synchronous face-to-face interaction can lead to increased misinterpretations [3]. Moreover, telecommuting often triggers a change in communication behaviors, resulting in greater reliance on text-based exchanges at the expense of richer voice and video interactions. This change can significantly hinder communication effectiveness and, importantly, stifle the development of innovative ideas [4]. Given the strong desire for remote work among professionals, companies face pressing challenges in maintaining essential functions and fostering effective collaboration. Therefore, there is a clear and urgent need to thoroughly examine how telecommuting impacts internal communication, particularly regarding its most critical aspects for the employee experience.

Drawing on Media Synchronicity Theory [5], this chapter explores employees' views on how telecommuting affects three key elements of organizational success:

- The development of a shared understanding of their role within the company.
- The visualization of their contributions to the company.
- The effectiveness of performance evaluation processes regarding their contributions.

Understanding how telecommuting influences these areas is essential for organizations seeking to effectively and sustainably navigate the evolving work landscape, as well as to greatly improve our understanding of the impact of alternative work arrangements on organizational performance.

To achieve this, this chapter begins by defining telecommuting and distinguishing it from similar concepts. It also explores the influence of various media options on communication experiences through the lens of Media Synchronicity Theory. We then transition to a detailed discussion of the implications of telecommuting for developing shared understanding, visualizing contributions, and evaluating performance. The Methods section provides a comprehensive overview of our research approach, including the participant selection criteria and the interview methodology. Subsequently, the Results section presents the four core themes identified during our data analysis, offering rich, qualitative insights into participants' perspectives. The Discussion section synthesizes our findings, outlining both their practical implications for managers and their theoretical significance, while addressing study limitations and suggesting avenues for future research. Finally, the conclusion succinctly reiterates the chapter's primary aim and central discoveries.

2. Main concepts

2.1 Describing telecommuting, teleworking, and remote work

Teleworking and remote work are often used interchangeably with telecommuting [6, 7]; however, these terms have distinct meanings. The recent introduction of “hybrid work,” which frequently lacks a clear definition, adds to the confusion.

Telecommuting entails the partial or complete elimination of commuting and can be categorized by frequency (full-time or part-time) and location (home-based or non-home-based) [8–11]. In essence, telecommuting involves an employee performing tasks from home (home-based telecommuting) or a location near their residence, such as a coworking space (non-home-based telecommuting), rather than commuting to their regular workplace (e.g., a shoe factory). Working from an alternative location daily generally qualifies employees as full-time telecommuters, although this classification can be flexible depending on the interpretation of “every day.” This chapter adopts Kilson and Tavares’s definition of full-time home-based telecommuters as “professionals who are allowed to perform their work from home on a daily basis,” who may “work from home 100% of the time, only having non-regular/ sporadic in-person meetings in cases where the company has physical space” (p. 5) [12]. Conversely, part-time employees are those with a regular, recurring obligation to work at the company premises. Although this definition is specific to home-based telecommuting, it can include full-time non-home-based telecommuters by substituting “home” with a location like “coworking space.”

This categorization is important because different types of telecommuting lead to varied work experiences. For instance, working from a coworking space may involve interaction with professionals from various companies, unlike working from home. Similarly, part-time telecommuters usually have more in-person interaction with colleagues than full-time telecommuters.

Teleworking, closely related to telecommuting, is defined as “the substitution of telecommunications technology for work-related travel” (p. 413) [11]. Unlike telecommuting, which focuses on reducing or eliminating commutes, teleworking can occur virtually anywhere, including at home, the office, or a park. For instance, when an employee at the shoe factory works from the company’s premises and uses her cell phone to communicate with a colleague at another plant, she is teleworking. Teleworking is a widespread practice facilitated by ICT, and it does not require advanced technology; even tools like the telegraph illustrate its historical prevalence (e.g., smoke signals or carrier pigeons). Remote work is any job performed physically away from the employer or manager [9]. For example, when the shoe factory employee visits a shoe store to present products and uses her tablet to record customer feedback for the marketing team, she works remotely. In this scenario, she is also teleworking. Conversely, telecommuting includes both teleworking and remote work [9].

The concept of hybrid work gained significant traction as COVID-19 restrictions eased and traditional commuting patterns re-emerged. While it typically denotes part-time telecommuting, the term is often used without explicit clarification, leading to varied interpretations. For instance, a schedule where an employee works from the office in the morning and from home in the afternoon could be labeled hybrid work. However, this example differs from telecommuting because it does not involve reducing or eliminating commuting. Therefore, hybrid work can represent a distinct work arrangement.

2.2 Communication synchronicity

Communication encompasses three core elements: a transmitter (sender), a channel (transmission means), and a receiver. The interaction of these elements creates the medium. Group communication entails two key processes: information conveyance and convergence on meaning [13]. Conveyance is the transmission of raw

information, followed by individual interpretation. The receivers process this shared information to grasp its meaning. Subsequently, convergence involves sharing these interpretations to reach a common understanding [5, 13, 14].

Consider the shoe factory employee: her online forms detailing visits to shoe stores convey information to the marketing team. Their follow-up meeting to clarify notes and discuss store interest seeks to reach a consensus on the best sales approach.

Numerous media options exist for communication, each possessing varying media capabilities – “potential structures provided by a medium which influence the manner in which individuals can transmit and process information” (p. 583) [5]. The degree of each capability affects communication performance by shaping conveyance and convergence [5, 13, 14]. The relative degree of these capabilities determines a medium’s synchronicity, directly impacting both conveyance and convergence [5, 13, 14]. For instance, phone calls facilitate synchronous communication more effectively than written documents.

Media Synchronicity Theory (MST) details how media capabilities influence a team’s communication performance, affecting both information conveyance and meaning convergence [5]. **Table 1** outlines these five capabilities and their implications. **Table 2** provides examples of media and their relative capability degrees.

Asynchronous media generally excel at conveying information, while synchronous media are better suited for converging on meaning. Conveying complex or new information often requires time for assimilation, making asynchronous options more favorable. Conversely, convergence, which aims for shared understanding, benefits

Capability	Relevance to communication
<i>Parallelism.</i> Capability to concomitantly transmit messages from different senders [5].	Higher parallelism enables more simultaneous participation, increasing potential ideas but potentially reducing individual focus [14]. Parallelism becomes more important for information conveyance with larger groups [13].
<i>Rehearsability.</i> Capability to revise a message before sending it [5].	Rehearsability can hinder communication because the time taken to compose messages reduces synchronicity [5] and may lead to increased user fatigue [15]. Furthermore, higher language proficiency among participants reduces the need for rehearsability [16].
<i>Reprocessability.</i> Capability to reaccess a message during or after the communication [5].	Higher reprocessability facilitates access to information for review and analysis, both during and after communication [16]. This is especially beneficial for complex, new, or extensive content [5, 13]. However, it can also induce anxiety, as participants may feel vulnerable knowing that past messages can be revisited [15].
<i>Symbol sets.</i> The number of ways information may be encoded [5].	A medium’s capacity to encode information with various symbols affects communication synchronicity. For example, gestures can convey reactions more quickly than typing [5]. More diverse symbol sets in written media, like emojis and images, can enhance social intimacy [15]. Nevertheless, having a wider array of symbols is not always better [13, 16]. While face-to-face communication permits a broader range of symbols than email, email might be more suitable for transmitting long sequences of numbers [16].
<i>Transmission velocity.</i> The time for a message to be delivered to its recipient [5].	Higher transmission velocity in media generally enhances synchronicity, allowing for faster feedback and improved coordination [5]. However, scheduling communication may also be necessary [13]. While rapid feedback through high-velocity media, such as instant messaging, can reduce communication fatigue, the opposite might also occur [15].

Table 1.
Media capabilities.

Media	Parallelism	Rehearsability	Reprocessability	Symbol sets	Transmission velocity
Email	High	High	High	Low-Medium	Low-Medium
Face-to-Face	Low	Low	Low	Low-High	High
Instant Messaging	Medium	Medium	Medium	Low-Medium	Medium
Telephone	Low	Low	Low	Medium	High
Video Conference	Low	Low	Low	Low-High	Medium-High
Voice Mail	Low	Low-Medium	High	Medium	Low
Paper-Written Documents	High	High	High	Low-Medium	Low

Based on Refs. [13, 14, 16].

Table 2.
Media capabilities degrees.

from rapid interaction through synchronous media to discuss different viewpoints [5, 13, 14]. However, higher synchronicity is not always ideal for convergence, primarily when language barriers exist; asynchronous media allow for review and thoughtful responses [17]. As communication norms and familiarity with media, tasks, and colleagues evolve over time, the need for convergence—and consequently, synchronous media—tends to decrease [5, 13, 14].

Inadequate information conveyance can lead to incorrect conclusions, and failed convergence hinders progress due to a lack of shared understanding [5]. Understanding these characteristics and their contextual relevance is crucial for quality communication. The most suitable media often depends on the context and objectives of the communication. A conversation may utilize different media to meet evolving needs [5, 13, 14].

For instance, a meeting to decide on a shoe factory's sales approach might involve face-to-face discussion, slide presentations (synchronous) for immediate interaction, and visual summaries. Simultaneously or subsequently, meeting minutes are emailed to participants (asynchronously) to ensure everyone has a record of decisions. Thus, different media can be used concurrently or sequentially based on communication demands.

3. Telecommuting implications for companies' activities

By working physically away from the rest of the organizational members, home-based telecommuters significantly reduce their dependence on transportation, while heavily increasing their dependency on ICT to mediate their interactions [10]. Thus, like any other work arrangement, home-based telecommuting offers plenty of opportunities and challenges for companies that adopt it. For example, on the one hand, telecommuting is positively associated with job satisfaction, employee-perceived autonomy [18], productivity [19], and work quality [20]. On the other hand, replacing in-person interactions with ICT-mediated interactions may challenge employees to develop a shared understanding regarding their activities, visualize their contributions to the company, and have a fair performance evaluation.

3.1 Shared understanding

Working from home may lead employees to reduce their synchronous communication, while increasing their use of asynchronous media. Employees might also spend more time communicating with colleagues with whom they have strong ties, spending less time with those with weaker connections. The increased use of asynchronous media can make conveying and understanding complex information more challenging [4]. For example, researchers have shown that prolonged use of text-based media during the convergence process, when tackling complex and ambiguous topics, results in adverse performance outcomes for participants during and after the communication. Over time, these cumulative adverse effects could reduce employees' productivity [21]. Moreover, due to the added cognitive effort needed when discussing complex ideas through text-based media, employees often focus more on information that supports their viewpoints than on information that challenges them, potentially leading to biased conclusions [3]. In this context, employees will likely share less knowledge, impacting a company's innovation capacity [4, 22].

Then, teams partially or entirely composed of telecommuters may face additional challenges in coordinating their activities [23] and establishing a shared understanding [24]. This raises important implications, as achieving a shared understanding is vital for a company because “[a] shared understanding of the team's goals ensures that the team is moving together toward a common vision” (p. 23) [25].

3.2 Contribution visualization

Helping employees visualize how their daily tasks benefit others can positively influence their performance [26, 27]. Specifically, when employees can see how their work has improved the lives of others, they feel more motivated [26]. Furthermore, employees who believe that others appreciate their work demonstrate enhanced job performance [27].

However, because home-based telecommuters do not directly experience what happens beyond their workspace, it might be harder for them to notice this connection and the positive practical effects of their work. For example, employees may not be able to perceive the positive emotions expressed by customers whose lives have been enhanced by the services they provided, because of the limitations of the symbol sets in the media [5]. Likewise, employees residing in remote areas might fail to recognize how their work has contributed to the development of the local community.

Then, because of the challenges in achieving a shared understanding in a virtual context [24, 25], it may be more difficult for employees to grasp why their roles are significant. Likewise, employees may struggle to visualize their contributions due to their ICT-mediated interactions, which cannot convey the relevant aspects that face-to-face interactions can [25].

3.3 Performance evaluation

Although telecommuters may perceive that the procedures regarding their compensation and treatment by supervisors are fair [28], the physical and temporal distance can create barriers for managers in evaluating employees' performance [6]. At the same time, employees may also encounter barriers in showcasing their contributions to the company, particularly when it pertains to tacit knowledge, a form of knowledge that is difficult to articulate explicitly [29–31].

In this context, managers may largely base their judgments on outcomes of activities that are more easily measurable [28, 32]. Indeed, the greater the frequency of telecommuting, the stronger the employees' perception that their performance is being assessed through output controls [33]. Furthermore, depending on the media selected and its capabilities, including symbol sets and transmission speed, employees and managers may encounter additional conflicts when discussing aspects of employee performance, as some comments may be interpreted as more aggressive or probing by either party [3].

4. Methods

This chapter is based on data from a study exploring telecommuters' perceptions of their participation in the company's organizational purpose. It included examining a series of work-related experiences, including those discussed above. Using a combination of purposeful and snowball sampling [34], all participants were full-time home-based telecommuters, except for one. Participants were "professionals who are allowed to perform their work from home on a daily basis" (p. 5) [12]. These employees have no formal obligation to commute to a traditional workplace. However, they may still make non-regular visits to the traditional workplace for sporadic work-related meetings, casual gatherings, and voluntary visits [12]. After emailing five participants who met the basic criteria, they were asked to introduce the study to other potential participants.

To access their perspectives, employees were interviewed remotely *via* Zoom during sessions that averaged 1 hour and occurred between October and November 2022. Employees responded to several questions, some of which followed a pre-defined script. They were free to express themselves, so no interview followed a strict order.

Resorting to a thematic analysis, we studied the interview transcriptions and selected every relevant statement for the study. While identifying relevant statements, we needed to answer two questions: "a. Does it contain a moment of the experience that is a necessary and sufficient constituent for understanding it? b. Is it possible to abstract and label it?" (p. 120) [35]. After interviewing 23 participants, we ceased data collection due to data saturation.

The participants' ages ranged from 26 to 54 (Mean = 36.48, SD = 7.16), with females representing 69% of the sample. Overall, participants were highly skilled, with 78% holding at least a bachelor's degree. They worked in various fields, including customer support, information technology, geoprocessing, and project management. Employees worked for 14 different companies, most of which operated in multiple countries. The number of employees ranged from a few dozen to hundreds of thousands. Their sectors included lodging, cybersecurity, logistics, telecommunications, and more. Most are based within the European Union, with a few in North and South America.

5. Results

Four main themes emerged during the data analysis. For each theme, it was possible to identify subthemes. **Table 3** lists all the themes and their respective subthemes.

Themes	Subthemes
Experience of working from home	Reason for working from home
	Benefits of working from home
	A lonely job
	Distance communication advantages
	Self-perception of productivity
Social interactions at work	Frequent contact only with direct coworkers
	Media usage context
Organizational onboarding experience	Learning experience of work activities
	Connection of the work with the rest of the organization
Organizational contribution and performance evaluation experiences	Visualization of self-contribution and that of coworkers
	Performance evaluation

Table 3.
List of themes and subthemes.

5.1 Experience of working from home

5.1.1 Reason for working from home

Employees' reasons for working from home were twofold: circumstantial or intentional. Some found remote roles appealing during job searches or due to practical reasons like company location. The COVID-19 pandemic also mandated remote work, which some employees later preferred. Others actively sought remote positions for improved work-life balance, valuing flexibility, commute savings, and location independence.

"So, the company was Argentinian, I was in Colombia, and the position would be to manage the Colombian market for this Argentinian company. And, as this company did not have a physical office, the virtual model was adopted" (Participant 6).

"I think it is a matter of freedom and flexibility. My previous job was 9 hours a day plus commuting. [...] I was always eating outside, so a lot of food, or worse quality food than cooking at home" (Participant 9).

5.1.2 Benefits of working from home

Employees cited several benefits of working from home. The most common were time saved from commuting, and greater flexibility in managing work around personal needs, such as childcare. Increased social comfort was another key advantage, with employees feeling more at ease in their own space, and having more control over workplace interactions. Both male and female employees noted the shift to more comfortable attire, like pajamas. Female respondents also reported reduced social pressure regarding their appearance (e.g., makeup, high heels), and an increased sense of personal safety, such as not having to walk home alone at night.

"Daily, I have the freedom to choose my schedule and how I do things as long as the objectives are met. [...] I really like working toward goals and having the freedom to manage my time" (Participant 5).

"I have pets, so to be with them is a very important part of my life [...] So, whenever I had to go back to the office for my previous role, I thought I missed that the most at the time I had it with my pets" (Participant 19).

"Sometimes, we catch rude customers, and we have to try to take a deep breath and not respond in the same way [...] Sometimes, I think I am glad I am behind the phone. If I was there at the counter, I do not know how I would be able to manage the situation" (Participant 10).

5.1.3 A lonely job

The physical and temporal distance of remote work often leads to feelings of loneliness and isolation among employees. They reported a significant reduction in social interactions and found that ICT-mediated communication, such as video calls, cannot fully replace face-to-face contact. However, respondents noted that video communication can enhance understanding and build trust.

"[...] it is a bit of a lonely job. [...] working in an office, has contact with colleagues. There is another type of experience that is not alone. [...] It is not the same thing as being in a space with other people having lunch" (Participant 4).

"I realize that it is nicer to see other people's faces when a person is talking because if the person has the camera off, you do not know that the other person is even there. [...] I can tell if she is in a good mood, if she is not in such a good mood" (Participant 22).

5.1.4 Distance communication advantages

A key communication advantage noted is the ability to quickly and directly share information across an organization while preserving message integrity. Employees also believed that ICT streamlines the often complex coordination of communications involving multiple individuals, facilitating same-day or simultaneous interactions.

"I talk to 100 people a day [...] I do not think it was even possible to have so many people in the office. Also, it would be harder to be side-by-side with a colleague from a certain department who has a question. [...] I think it also ameliorates a lot in terms of communication as it avoids many conflicts [...] if the person responds more harshly, I am somewhere else doing something else" (Participant 8).

5.1.5 Self-perception of productivity

Many employees felt more productive because they saved time by not commuting to work, had greater freedom to control their working schedule, had reduced social interactions, and had constant access to work. Furthermore, being at home does not alter their level of professionalism. They remain highly aware of the importance of keeping everything organized and completing all their tasks as if they were directly supervised.

"[...] I am going to call someone in the office because I need to speak to someone. That is it. It is over. [...] Now I have seven more hours of peace. So the fact that we can manage the amount of social contact, I think it is good [...]" (Participant 18).

"[...] since there is no direct boss, I am responsible for my area. [...] The more up-to-date and organized things are, the faster I can respond to requests. Therefore, what I do outside the measurable parameters, which is not much more than what I do, I would do anyway" (4).

5.2 Social interactions at work

5.2.1 Frequent contact only with direct coworkers

Employees mainly interact with their immediate coworkers regularly. Wider company communication is usually restricted to events, scheduled meetings, and major announcements.

"Sometimes, of course, I interact with other teams [...], but on a day-to-day basis, my interaction is with my team. But there are days when I do not even talk to anyone. I have my work to do and focus on it" (Participant 9).

5.2.2 Media usage context

While respondents favored audio, and sometimes video, for complex topics and varied perspectives due to enhanced contextual cues, like facial expressions, that aid in synchronous communication and understanding, they also identified drawbacks. Frequent, especially unannounced, audio calls were perceived as intrusive, causing interruptions and demanding undivided attention, thereby impeding multitasking. Consequently, unscheduled audio calls are generally reserved for urgent situations. Textual communication emerged as the most prevalent choice, with some respondents emphasizing its critical role in record-keeping for legal reasons, progress tracking, and creating shareable documentation.

"[...] when there are meetings that are not to ascribe tasks but to discuss the direction of the work, which is a little more brainstorming, I prefer calling. It is easier to call because there will be several people involved, there will be ideas coming from different sides [...]" (Participant 23).

"[...] because we also work with people from different time zones, and sometimes there is a need to communicate with these people. As they are not available at the moment, it makes sense to communicate by text and wait for the person's response" (Participant 13).

5.3 Organizational onboarding experience

5.3.1 Learning experience of work activities

Employees reported that learning their tasks and procedures remotely was not impeded by physical distance. The online resources and the nature of their

computer-based work allowed for a learning experience similar to in-person onboarding. Interestingly, many employees noted the benefits of remote onboarding, such as increased access to international colleagues, and the impression that virtual processes were often better organized than traditional ones. However, they also encountered learning difficulties, primarily attributed to a lack of clear procedures and insufficient support from employers, rather than to the challenges of remote work itself. The only difficulty directly related to telecommuting was the less frequent communication, which had the potential to hinder their learning.

"We had our Google Drive, and there was a shared folder with information about the company [...] about what was expected and the step-by-step of what we should do [...] We could access these documents at any time" (Participant 11).

"If I was working remotely from the beginning, I think that maybe I would still be missing things, precisely because of this issue of communication that, whether we like it or not, ends up being reduced when we are telecommuting" (Participant 14).

5.3.2 Connection of the work with the rest of the organization

Most employees explicitly stated an understanding of how their contributions connect to the broader company, with some providing concrete examples of this interconnectedness and illustrating how internal process failures can create cascading effects throughout the organization.

"[...] I can develop my work, but then there comes a time when I am dependent on the work of the technology department. And if the technology department has limitations in terms of human resources, my work is negatively impacted" (Participant 6).

5.4 Organizational contribution and performance evaluation experiences

5.4.1 Visualization of self-contribution and that of coworkers

Employees primarily visualize their and their coworkers' contributions through the tangible final outputs of their tasks. This quantitative perspective was viewed positively by some, while others felt it overlooked important, less quantifiable aspects of their work. Notably, respondents indicated that working remotely did not affect their perception of their contributions, as their online tasks and observable results remained consistent.

"People evaluate my work by my results and not by my posture during the eight hours of work. [...] that is why I think remote work is good because if the results are presented, people cannot question being online or the number of messages people put in public channels [...]" (Participant 18).

"So, my area is remote sensing, so it is already remote. [...] in that sense, whether it is face-to-face or not [...] it is the exact same experience" (Participant 14).

Opinions varied regarding the influence of feedback media on its perception. Some employees believed the medium was inconsequential, with word choice being paramount. However, others felt the media did matter, with some valuing channels

that conveyed more contextual signals, such as voice tone and facial expressions, which they believed could facilitate better understanding.

"Yes, there are things I prefer to be on a call. Precisely because of the more social part of the issue, to discuss more difficult things or more positive things, I think it is good to have this moment" (Participant 12).

When asked about the impact of their work, employees generally reported a clear awareness of its practical effects. Observing positive outcomes was considered a significant motivator and a positive reinforcement of their professional identity.

"I feel good for being able to help people and for feeling that I have a beneficial impact on society" (13).

5.4.2 Performance evaluation

Employees frequently reported that performance evaluations take place during their regular interactions with supervisors. The lack of a formal, structured evaluation process and direct progress monitoring was largely attributed to a high level of trust between employees and their supervisors. This informal approach to evaluation showed varying levels of satisfaction based on the nature of the work. Employees whose tasks were easily registered and quantifiable tended to express greater satisfaction with their performance evaluations compared to those with less measurable responsibilities. Consequently, effective communication between employees and supervisors was identified as a crucial element in assisting employees with less tangible tasks and demonstrating their progress. Ultimately, most employees viewed their performance evaluations as fair, primarily due to these direct and ongoing interactions with their supervisors.

"So, surprisingly, it works if you really trust people and show them that they have a certain responsibility [...] you feel that you are working for your name because, on each email, it is your name" (Participant 15).

"[...] being at home, if I have results, it means I worked, but if I do not have results, it does not mean I have not worked" (Participant 1).

"In departments where I felt that communication was better, my work was more recognized than in others [...] the fact that it is remote is not the biggest problem [...]" (Participant 18).

6. Discussion

Employees confirmed that working from home often reduces workplace distractions [8, 36], particularly concerning interruptions from colleagues, such as unscheduled conversations. Indeed, the greater control over their social interactions enables them to choose whom they communicate with, and for how long. As a result, employees reported that their interactions were primarily confined to direct coworkers, which aligns with recent research showing that working from home reduces communication frequency and network dynamism [4, 37].

Interactions *via* media characterized by high transmission velocity and low reprocessability, such as telephone calls, typically demand employees' undivided attention, necessitating the interruption of ongoing tasks [38]. Therefore, corroborating previous research [15, 16], some employees perceive telephone calls as intrusive and best reserved for urgent communication. This, coupled with the negative association between team inclusion and asynchronous media like email [17], may contribute to a decreased willingness to communicate among remote workers, potentially explaining the observed reduction in social interactions and increased feelings of isolation.

In line with this, employees reported an increased focus [37], enhancing their self-perception of productivity. These perceptions align with prior research linking telecommuting to improved productivity [19]. This rise in perceived productivity may also be attributed to employees' greater control over their work routines, enabling them to optimize the order and timing of their tasks. Furthermore, the flexibility in managing breaks supports the positive relationship between telecommuting and employee-perceived autonomy [18].

6.1 Shared understanding

Working from home leads employees to communicate more frequently through instant messaging [4]. This behavior can be attributed to the medium/high rehearsability and reprocessability of text-based media. Text-based communication allows recipients to access messages conveniently without interrupting ongoing tasks. Furthermore, it offers an opportunity for reflection before responding. The enduring nature of text-based communication also establishes it as a valuable repository of information, enabling employees to revisit details of past discussions or task procedures. It also records agreements, which is particularly important for legal compliance when interacting with external stakeholders. Moreover, as employees became more familiar with their tasks and their coworkers' communication patterns, their reliance on synchronous media like telephone or video conferences decreased. This shift occurred as shared understanding developed, reducing the need for conveying supplementary nonverbal cues [5].

While previous studies have highlighted the potential threat of increased text-based communication to discussions of complex and unstructured topics [3, 4, 21, 22], our findings suggest a more nuanced perspective. Employees in our study demonstrated an awareness of different media capabilities and could discern the most appropriate media for specific communication needs. Notably, most employees reported using audio or video calls for brainstorming sessions and discussions involving complex or unstructured conversations. As a result, employees generally rated their communication effectiveness positively, sometimes even surpassing their experiences in co-located settings. This improvement is attributed to the broader array of communication media available following the transition to remote work. They reported effective comprehension and a sense of being understood. Given the routine nature of most organizational tasks, full-time remote workers are likely to continue their increased reliance on text-based media while decreasing their use of other channels. As long as employees maintain the autonomy to choose the most suitable media, this increased adoption of text-based communication does not seem to pose a significant threat to achieving shared understanding.

In the end, the primary impediments to achieving a shared understanding of roles among employees pertained to the quality of internal communication. Specifically, three key issues emerged: lack of clarity, inconsistent frequency, and information

segregation. Regarding clarity, employees reported instances of information conveyed through jargon, or lacking sufficient contextualization, hindering comprehension, particularly for those not directly involved. Furthermore, the frequency of updates regarding company activities and objectives decreased over time, leaving many employees uninformed. Finally, information segregation was identified as a problem, with certain information selectively disseminated, based on communicators' assumptions of irrelevance to others. Importantly, none of these issues are inherently linked to telecommuting or ICT-mediated communication. Rather, they relate to the fundamental management of internal communications and can manifest in various organizational contexts, including traditional co-located workplaces.

6.2 Contribution visualization

Beyond its importance for task completion, effective internal communication significantly influences telecommuters' professional self-perception and, consequently, their well-being [37]. Our findings underscore the critical role of clarity regarding how employees' roles contribute to organizational value, reinforcing a sense of relevance. This aligns with prior research indicating that employees experience greater motivation when they perceive the positive practical outcomes of their work [26, 27]. In addition to visualizing their contributions, employees frequently reported understanding how their colleagues' work interconnected with the broader company and recognizing the practical effects of their contributions. Similarly, many of their colleagues could also acknowledge their contributions. Consequently, employees indicated that physical distance did not pose a limitation in this regard. Indeed, for some whose work is entirely computer-based and location-independent, home-based telecommuting did not alter their perception of the practical effects of their activities, highlighting that the physical workspace can be irrelevant for contribution visualization depending on the nature of the job.

However, the intangible aspects of work that were not easily quantifiable or communicable through software were often overlooked. Consistent with this, there were reports indicating that managers did not share information about specific employees' ongoing projects with others, fostering information segregation. For example, colleagues often lacked visibility into the contributions of employees whose work had a long-term outlook and whose impact was not immediately observable. Similarly, colleagues were frequently unaware when these employees addressed urgent and unpredictable issues that could delay their results. These circumstances led to frustration among the affected employees due to concerns about potential negative perceptions of their performance by their colleagues.

6.3 Performance evaluation

Managers, like employees, often evaluate contributions based on final outputs. As a result, contributions that are not easily captured by software may be overlooked unless explicitly discussed during meetings. Consistent with prior research [38, 39], employees emphasized the importance of establishing synchronous communication to foster mutual understanding of diverse perspectives. In this context, media characterized by high transmission velocity and rich symbol sets, such as audio and video calls, are the most suitable options. Additionally, both the chosen communication medium and the language used during performance discussions are critical in preventing misunderstandings regarding both content and tone [3]. However, as noted in

Ref. [40], it is essential to balance the level of synchronous interaction with managers to avoid creating a perception among employees of constant monitoring.

Despite the importance of regular feedback from direct managers in remote work settings [37], some employees reported a decline in performance feedback after shifting to home-based telecommuting. In this context, feedback was often provided only during scheduled performance discussions or when explicitly requested, highlighting the need for proactive initiatives, such as socialization events, to foster the sharing of feedback among organizational members [37].

Ultimately, our results corroborated the challenges associated with remote performance evaluations faced by both employees and managers [28, 32]. Employees reported difficulty demonstrating their work progress due to the inherent inability to quantify certain aspects of their roles. While tracking quantifiable metrics like mouse clicks or hours worked may be effective for repetitive tasks with limited interpersonal communication [41, 42], it falls short for roles with an intangible nature, where the relationship between time and output is less direct [41]. Still, employees demonstrated an ability to discern and select media capabilities most relevant to specific situations. Thus, remote management challenges can be mitigated by strategically aligning communication media with the context [40].

6.4 Theoretical implications

Beyond supporting [4] observations regarding shifts in employee communication behaviors after home-based telecommuting adoption, our findings offer insights into the underlying reasons. These include both readily apparent factors, such as the absence of casual, unscheduled interactions, and less obvious factors, like employees' heightened focus on individual tasks. This increased focus also helps explain the tendency for telecommuters to intensify communication with direct collaborators, while reducing interactions with more peripheral organizational members who do not directly impact their immediate tasks.

Prior research has raised concerns about the potential limitations of ICT-mediated interactions, particularly text-based communication, in conveying and comprehending complex topics [3, 4, 21, 22], suggesting long-term negative impacts on employee performance and organizational innovation. However, our results indicate that employees carefully consider the context when selecting their communication methods, opting for richer alternatives like voice or video calls, incorporating visual aids (e.g., pictures, drawings, and screen sharing), or combining media when the topic is unstructured or requires extensive discussion.

Similarly, while home-based telecommuting has been associated with difficulties in accurately evaluating employee performance and contributions [6], our findings indicate that, by leveraging various media options, employees and managers can offset the absence of passive communication through enhanced active communication. Employees and managers can use voice or video calls to clarify perspectives and resolve misunderstandings. Thus, our results do not indicate an inherent flaw in telecommuting that hinders effective organizational functioning. Instead, training organizational members on the capabilities of different media [39] and adapting internal communication processes to the remote context can address many commonly cited challenges.

Last, our research supports [41]'s claim that relying solely on easily quantifiable work inputs to monitor productivity in non-repetitive and intangible roles is inadequate, as these metrics do not capture essential aspects of the job. Therefore,

our findings emphasize the vital importance of establishing regular, high-quality synchronous communication between managers and employees for enhanced performance evaluation. These interactions are also crucial for ensuring that employees comprehend their role within the company and how their contributions align with strategic objectives.

6.5 Practical implications

6.5.1 Internal communication quality

The primary challenges for home-based telecommuters stem from internal communication quality, not distance. Key issues affecting effectiveness are a lack of clarity, inconsistent frequency, and information segregation. In modern organizations, most stakeholder interactions rely on ICTs, which increase with organizational growth and make direct observation impractical. Effective ICT-mediated communication is crucial for better internal communication.

- *Lack of clarity:* Internal information often lacks context or uses jargon, hindering understanding, especially across different departments and for new hires who need background. Crucial company-wide information should use accessible language for maximum comprehension and engagement.
- *Frequency inconsistency:* While initial information flow is high, organizational communication often decreases. This inconsistency also affects performance evaluation discussions. The absence of passive communication in remote settings requires more active communication. Therefore, managers and employees should establish regular two-way interactions for updates, expectations, insights, and experiences [43]. This could involve implementing structured, regular check-ins or utilizing communication platforms that facilitate two-way dialog and feedback.
- *Information segregation:* Characterized by incomplete or selective information sharing, information segregation can fragment an organization, leading to conflicting objectives, internal conflict, and dissatisfaction. To ensure alignment and transparency, all employees should have access to comprehensive information about the company's present and future, and managers should empower employees to determine their own access to information. This proactive approach to information sharing fosters a sense among employees that they are truly participating in internal communications and belong to the rest of the company, consequently increasing their willingness to contribute by openly sharing their thoughts [44].

In conclusion, these challenges are not inherent to telecommuting or ICTs but reflect basic internal communication management issues applicable to all work environments. Clear, consistent, and inclusive communication strategies are vital for an informed and engaged workforce, regardless of location.

6.5.2 Full-time home-based telecommuting adoption

When considering the adoption of full-time home-based telecommuting, managers must evaluate several critical factors. Firstly, local job dependability is paramount.

Roles that require physical presence at a specific location due to the need to access specialized resources (e.g., heavy machinery) or provide location-specific services (e.g., hotel reception) may present significant challenges or preclude telecommuting implementation.

Secondly, organizational readiness is crucial. Managers should assess the company's preparedness by addressing key questions: Can employees access all necessary information remotely to perform their tasks effectively? Are all organizational members proficient in using various media to ensure clear and unambiguous communication? Do managers possess the skills and tools to evaluate employee performance remotely and fairly? Can employees effectively demonstrate their contributions to the company remotely?

Finally, the potential impact on the company's stakeholders must be considered carefully. For instance, is in-person interaction between employees and customers essential to the desired customer experience? A thorough evaluation of these aspects enables managers to make informed decisions about the feasibility and strategic implications of adopting full-time home-based telecommuting.

6.6 Limitations and future research

A limitation of this study lies in the self-reported nature of the data, as employees sometimes found it challenging to articulate specific aspects of their communication behaviors, potentially due to a lack of prior, in-depth reflection. Future research should employ alternative data collection methods that encourage more thoughtful and detailed responses. Qualitative surveys with open-ended questions, story completion techniques, or vignettes could provide richer insights by allowing participants more time and flexibility to elaborate on their experiences and add nuanced perspectives.

Furthermore, while our sample exhibited diversity across several dimensions, it was not exhaustive. Most participants were female, highly educated, relatively young, working from home without roommates during work hours, and engaged in roles that were easily adaptable to computer-based execution. Future research examining a more demographically and professionally diverse sample is essential to provide a broader understanding of remote communication experiences across various employee profiles and job types.

7. Conclusion

The growing tension between employees wanting to work from home and executives insisting on their presence in the office raised the crucial question of whether returning to the office is truly necessary for achieving positive organizational performance. This question's premise focused on whether completely replacing face-to-face interaction among employees would jeopardize the quality of internal communication. This chapter examined this question by exploring the internal communication experiences of full-time, home-based telecommuters, particularly how employees perceive media synchronicity regarding shared understanding, contribution visibility, and performance evaluation.

Examining employees' perceptions of developing a shared understanding of their roles within the company, we found that most employees find the processes for learning their tasks to be clear and that physical and temporal distance does not hinder this

learning. Furthermore, when considering the connection between their activities and the broader organization, along with the potential impact of their actions on company performance, employees show an awareness of their roles in both daily operations and long-term strategy objectives.

Similarly, investigating how employees perceive their contributions to the company, we found that the primary methods for visualizing both individual and collective contributions are through the tangible outputs of work activities. However, for employees whose work is less easily recognized or quantifiable, this output-centric perspective can lead to frustration in demonstrating their contributions. Importantly, the digital nature of many roles reduces the impact of physical and temporal separation on employees' perceptions of their contributions. Our findings also highlight the motivational significance of enabling employees to visualize the positive effects of their work.

Finally, exploring employees' perceptions of performance evaluation processes regarding their contributions revealed that performance feedback typically occurs during informal interactions with supervisors, facilitating a mutual exchange of perspectives. Aligning with the nature of their tasks, employees involved in easily measurable activities tend to express greater satisfaction with evaluation processes than those in more abstract roles. Furthermore, the media and language used to convey feedback are critical factors that influence employees' perceptions of these evaluations. Ultimately, employees indicate that clear, consistent, and open communication with their supervisors mitigates any perceived barriers to fair performance evaluation arising from physical and temporal distance.

In sum, our findings indicate that telecommuting does not inherently impede employees from establishing good-quality internal communication, and consequently, does not necessarily disturb employees' experience of these three aspects. The main factors hampering good-quality internal communication relate to how internal communication is managed, not to what media employees use. This is a matter that all companies, regardless of the work arrangements adopted, must consider.

Conflict of interest

The authors declare no conflict of interest.

Author details


Gabriel Almeida Kilson¹ and Patrícia Tavares²

1 ISEG – Lisbon School of Economics and Management, Universidade de Lisboa, Lisboa, Portugal

2 CECC – Research Centre for Communication and Culture, Faculty of Human Sciences, Universidade Católica Portuguesa, Portugal

*Address all correspondence to: gabrielkilson@outlook.com

IntechOpen

© 2025 The Author(s). Licensee IntechOpen. This chapter is distributed under the terms of the Creative Commons Attribution License (<http://creativecommons.org/licenses/by/4.0>), which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited. 

References

- [1] The ADP Research Institute. People at Work 2024: A Global Workforce View. 2024. Available from: <https://www.adpresearch.com/wp-content/uploads/2024/04/People-at-Work-2024-A-Global-Workforce-View.pdf> [Accessed: October 12, 2024]
- [2] Cerullo M. These Major Employers Are Making Workers Return to the Office. 2024. Available from: <https://www.cbsnews.com/news/amazon-other-companies-return-to-office-mandate/> [Accessed: December 08, 2024]
- [3] O'Neill TA, Hancock SE, Zivkov K, Larson NL, Law SJ. Team decision making in virtual and face-to-face environments. *Group Decision and Negotiation*. 2016;**25**(5):995-1020. DOI: 10.1007/s10726-015-9465-3
- [4] Yang L, Holtz D, Jaffe S, Suri S, Sinha S, Weston J, et al. The effects of remote work on collaboration among information workers. *Nature Human Behaviour*. 2022;**6**:43-54. DOI: 10.1038/s41562-021-01196-4
- [5] Dennis AR, Fuller RM, Valacich JS. Media, tasks, and communication processes: A theory of media synchronicity. *MIS Quarterly*. 2008;**32**(3):575-600. DOI: 10.2307/25148857
- [6] Allen TD, Golden TD, Shockley KM. How effective is telecommuting? Assessing the status of our scientific findings. *Psychological Science in the Public Interest*. 2015;**16**(2):40-68. DOI: 10.1177/1529100615593273
- [7] Wang W, Albert L, Sun Q. Employee isolation and telecommuter organizational commitment. *Employee Relations: The International Journal*. 2020;**42**(3):609-625. DOI: 10.1108/er-06-2019-0246
- [8] Kurland NB, Bailey DE. The advantages and challenges of working here, there anywhere, and anytime. *Organizational Dynamics*. 1999;**28**(2):53-68. DOI: 10.1016/s0090-2616(00)80016-9
- [9] Mokhtarian PL. Defining Telecommuting. 1991. Available from: <http://uctc.its.berkeley.edu/research/papers/080.pdf> [Accessed: June 01, 2022]
- [10] Nilles JM. Traffic reduction by telecommuting: A status review and selected bibliography. *Transportation Research Part A: General*. 1988;**22**(4):301-317. DOI: 10.1016/0191-2607(88)90008-8
- [11] Nilles J. Telecommuting and urban sprawl: Mitigator or inciter? *Transportation*. 1991;**18**(4):411-432. DOI: 10.1007/bf00186567
- [12] Kilson GA, Tavares P. Internal communication quality in a telecommuting context: A phenomenological exploration of telecommuters' communication experiences. *Social Sciences*. 2024;**13**(6):1-26. DOI: 10.3390/socsci13060286
- [13] Dennis AR, Joseph SV. Rethinking media richness: Towards a theory of media synchronicity. In: *Proceedings of the 32nd Annual Hawaii International Conference on Systems Sciences*; 1999. Maui. New York: IEEE; 2002. pp. 1-10
- [14] Dennis AR, Joseph SV, Cheri S, Michael GM. Beyond media richness: An empirical test of media synchronicity

- theory. In: Proceedings of the 31st Hawaii International Conference on System Sciences; 1998. Kohala Coast. New York: IEEE; 2002. pp. 48-57
- [15] Park YW, Lee AR. The moderating role of communication contexts: How do media synchronicity and behavioral characteristics of mobile messenger applications affect social intimacy and fatigue? *Computers in Human Behavior*. 2019;**97**:179-192. DOI: 10.1016/j.chb.2019.03.020
- [16] Niinimäki T, Piri A, Lassenius C, Paasivaara M. Reflecting the choice and usage of communication tools in global software development projects with media synchronicity theory. *Journal of Software: Evolution and Process*. 2011;**24**(6):677-692. DOI: 10.1002/smr.566
- [17] Fleischmann AC, Jolanta A, Peter C. Language proficiency and media synchronicity theory: The impact of media capabilities on satisfaction and inclusion in multilingual virtual teams. In: Proceedings of the 52nd Annual Hawaii International Conference on System Sciences. Maui: ScholarSpace; 2019. pp. 339-348
- [18] Gajendran RS, Harrison DA. The good, the bad, and the unknown about telecommuting: Meta-analysis of psychological mediators and individual consequences. *Journal of Applied Psychology*. 2007;**92**(6):1524-1541. DOI: 10.1037/0021-9010.92.6.1524
- [19] Martin BH, MacDonnell R. Is telework effective for organizations? *Management Research Review*. 2012;**35**(7):602-616. DOI: 10.1108/01409171211238820
- [20] Baek IG. The effect of telecommuting on information acquisition: Evidence from the US patent office. *The Accounting Review*. 2023;**98**(3):21-46. DOI: 10.2308/TAR-2020-0153
- [21] Gajendran RS, Loewenstein J, Choi H, Ozgen S. Hidden costs of text-based electronic communication on complex reasoning tasks: Motivation maintenance and impaired downstream performance. *Organizational Behavior and Human Decision Processes*. 2022;**169**:1-19. DOI: 10.1016/j.obhdp.2022.104130
- [22] van der Meulen N, van Baalen P, van Heck E, Mülder S. No teleworker is an island: The impact of temporal and spatial separation along with media use on knowledge sharing networks. *Journal of Information Technology*. 2019;**34**(3):243-262. DOI: 10.1177/0268396218816531
- [23] Dubé L, Paré G. The multi-faceted nature of virtual teams. In: Pauleen DJ, editor. *Virtual Teams: Projects, Protocols and Processes*. Hershey: Idea Group Publishing; 2004. pp. 1-39
- [24] Fay MJ, Kline SL. Coworker relationships and informal communication in high-intensity telecommuting. *Journal of Applied Communication Research*. 2011;**2**(39):144-163. DOI: 10.1080/00909882.2011.556136
- [25] Hinds PJ, Weisband SP. Knowledge sharing and shared understanding in virtual teams. In: Gibson CB, Cohen SG, editors. *Virtual Teams That Work: Creating Conditions for Virtual Team Efficiencies*. San Francisco: Jossey-Bass; 2003. pp. 21-36
- [26] Grant AM. Employees without a cause: The motivational effects of prosocial impact in public service. *International Public Management Journal*. 2008a;**11**(1):48-66. DOI: 10.1080/10967490801887905

- [27] Grant AM. The significance of task significance: Job performance effects, relational mechanisms, and boundary conditions. *Journal of Applied Psychology*. 2008b;**93**(1):108-124. DOI: 10.1037/0021-9010.93.1.108
- [28] Kurland NB, Egan TD. Telecommuting: Justice and control in the virtual organization. *Organization Science*. 1999;**10**(4):500-513. DOI: 10.1287/orsc.10.4.500
- [29] Raghuram S. Knowledge creation in the telework context. *International Journal of Technology Management*. 1996;**11**(7-8):859-870. DOI: 10.1504/IJTM.1996.025474
- [30] Rhoads M. Face-to-face and computer-mediated communication: What does theory tell us and what have we learned so far? *Journal of Planning Literature*. 2010;**25**(2):111-122. DOI: 10.1177/0885412210382984
- [31] Taskin L, Bridoux F. Telework: A challenge to knowledge transfer in organizations. *The International Journal of Human Resource Management*. 2010;**21**(13):2503-2520. DOI: 10.1080/09585192.2010.516600
- [32] Pianese T, Errichiello L, Cunha JV. Organizational control in the context of remote working: A synthesis of empirical findings and a research agenda. *European Management Review*. 2023;**20**(2):326-345. DOI: 10.1111/emre.12515
- [33] Groen BA, van Triest SP, Coers M, Wtenweerde N. Managing flexible work arrangements: Teleworking and output controls. *European Management Journal*. 2018;**36**(6):727-735. DOI: 10.1016/j.emj.2018.01.007
- [34] Saunders M, Lewis P, Thornhill A. *Research Methods for Business Students*. 7th ed. Harlow: Pearson Education Limited; 2016. p. 741
- [35] Moustakas C. *Phenomenological Research Methods*. Thousand Oaks: SAGE Publications; 1994. p. 192
- [36] Crandall W, Gao L. An update on telecommuting: Review and prospects for emerging issues. *S.A.M. Advanced Management Journal*. 2007;**70**(3):30-37
- [37] Stranzl J, Ruppel C, Einwiller S. Staying emotionally connected while being physically apart – Exploring what teleworkers need to stay committed and how internal communication can contribute. *Journal of Communication Management*. 2024;**28**(2):272-293. DOI: 10.1108/jcom-02-2023-0023
- [38] Dhanesh GS, Picherit-Duthler G. Remote internal crisis communication (RICC) – The role of internal communication in predicting employee engagement during remote work in a crisis. *Journal of Public Relations Research*. 2021;**33**(5):292-313. DOI: 10.1080/1062726x.2021.2011286
- [39] Qin YS. Inspiring employee engagement in remote work: The influence of leadership communication and trust in leadership. *International Journal of Strategic Communication*. 2024;**19**(3):1-18. DOI: 10.1080/1553118x.2024.2417669
- [40] Kumar N, Alok S. Media synchronicity implications for Indian white-collar employees' work-from-home wellbeing and preference, mediated by psychological needs satisfaction. *Journal of Indian Business Research*. 2022;**15**(2):209-226. DOI: 10.1108/jibr-08-2022-0212
- [41] Ko YH, Baek IG. The effect of computer monitoring on employees' productivity in telecommuting

arrangements. *Management Science*.
2024;**71**(1):103-122. DOI: 10.1287/
mns.2022.00588

[42] Wang LW, Williamson MG,
Yang L. The effect of total work-time
information on a performance evaluation
bias against telecommuting mothers. *The
Accounting Review*. 2025;**100**(2):421-
439. DOI: 10.2308/tar-2023-0027

[43] Yang Q, Feng Y. Does the use
of mobile instant messaging in the
workplace increase employees'
workload? *Behaviour and Information
Technology*. 2024;**2024**:1-15.
DOI: 10.1080/0144929x.2024.2397681

[44] Gomes P, Santos E, Martins E.
An exploratory analysis of internal
communication in times of the
COVID-19 pandemic. *Global Business
and Organizational Excellence*.
2023;**42**(5):37-49. DOI: 10.1002/
joe.22204