Coworker Phubbing:
Smartphone Use During Work Breaks and the Psychosocial Work Environment

Per Martinsson

Doctoral Dissertation in Psychology
Department of Psychology
University of Gothenburg
March 13 2026

Cover design: Per Martinsson
Print: Stema Specialtryck AB, Borås, 2026
ISBN: 978-91-8115-653-9 (PDF)
ISBN: 978-91-8115-654-6 (Print)
ISSN: 1101-718X Avhandling/Göteborgs universitet, Psykologiska institutionen
http://hdl.handle.net/2077/90500

Abstract

Martinsson, P. (2026). *Coworker Phubbing: Smartphone Use During Work Breaks and the Psychosocial Work Environment*. Department of Psychology, University of Gothenburg, Sweden.

The overall aim of this thesis was to explore coworker phubbing during communal breaks and its associations with psychosocial work environment factors. Phubbing (derived from "phone snubbing") describes the act of prioritizing one's phone over physically present individuals. In the research literature, phubbing has consistently been linked to various negative interpersonal outcomes, such as impaired communication, reduced relationship satisfaction, and negative affect. Although an increasing number of studies have explored how supervisor phubbing relates to employee outcomes, few studies have examined phubbing in lateral coworker relationships. This thesis consists of three studies. The first was a qualitative interview study investigating perceptions of workplace phubbing, along with perceived causes and consequences, in a sample of electricians and healthcare staff (n = 25). The findings suggested that phubbing could be construed as a social barrier in the workplace, potentially affecting collegial relationships. Further, factors underlying the behavior were explored, as well as contextual and normative factors that may be of relevance to how it is perceived. The second study quantitatively examined the relationships between coworker phubbing and the psychosocial measures of social support and community, commitment to the workplace, and horizontal trust in a sample of installation electricians (n = 807). The key result was that exposure to phubbing was negatively associated with these psychosocial work environment measures. The third study expanded on the previous two by employing a longitudinal three-wave design in a more diverse sample of the Swedish working population (n = 887). While cross-sectional associations at baseline were similar to those in the second study, there was no evidence that phubbing drove change in the perceived psychosocial work environment given the present time lag and sample. Overall, the findings suggest that phubbing in the context of coworker relationships may be an issue relevant to the psychosocial work environment.

Keywords: coworker phubbing, workplace phubbing, smartphones at work, social implications of smartphones, workplace breaks

Swedish Summary

Den centrala frågeställningen i denna avhandling är huruvida närvaron och användningen av mobiltelefoner på gemensamma pauser och raster i arbetet påverkar relationer arbetskamrater emellan, samt vilka potentiella konsekvenser detta förhållande i så fall skulle kunna få för engagemang i arbetet och organisationen. Termen ”phubbing”, en sammanslagning av de engelska orden ”phone” och ”snubbing”, beskriver beteenden där mobilanvändning i olika grad prioriteras framför social interaktion. Phubbing kan förekomma i olika typer av relationer. Tidigare phubbingforskning har framför allt riktat in sig på privata sammanhang, såsom par-, vänskaps- och familjerelationer, där phubbing har setts hänga samman med en rad negativa faktorer som relationstillfredställelse, nedstämdhet och konflikt. En mindre men växande gren av fältet har intresserat sig för phubbing i arbetslivet. Denna gren har främst undersökt kopplingen mellan chefers phubbingbeteenden och utfall som exempelvis tillit, arbetsengagemang och känsla av inkludering hos anställda. Den sammantagna bilden är att phubbing samvarierar med negativa tänkta utfall. Dock har få studier undersökt phubbing arbetskamrater emellan, och longitudinella ansatser är ännu ovanliga. I denna sammanläggningsavhandling ingår tre delstudier som undersöker kopplingen mellan phubbing arbetskamrater emellan och relevanta delar av den psykosociala arbetsmiljön. Den första var en kvalitativ intervjustudie som undersökte uppfattningar om egna och arbetskamraters phubbingbeteenden bland elektriker och hälso- och sjukvårdspersonal (n = 25). Resultaten visade att phubbing uppfattades som en social barriär på arbetsplatsen, med möjliga konsekvenser för kollegiala relationer och trivsel. Vidare utforskades faktorer som ansågs bidra till beteendet, samt kontextuella och normativa aspekter som kan påverka hur det uppfattas. Den andra studien utforskade kvantitativt sambandet mellan egna och andras phubbingbeteenden och de psykosociala måtten socialt stöd från kollegor, social gemenskap i arbetet, horisontell tillit, och engagemang i organisationen i ett urval av installationselektriker (n = 807). Huvudresultatet var att upplevelsen av att utsättas för phubbing av arbetskamrater var kopplad till lägre skattningar i de psykosociala måtten. Undersökningen vidareutvecklades i den tredje studien till att undersöka longitudinella samband mellan phubbing och

psykosocial arbetsmiljö i ett bredare urval av den arbetande befolkningen (n = 887). På tvärsnittssnivå observerades liknande resultat som i den andra studien, det vill säga att högre upplevd phubbing samvarierade med lägre skattad psykosocial arbetsmiljö. Dock hittades inga belägg för att phubbing drev förändringar i den psykosociala arbetsmiljön givet den aktuella studiedesignen och tidsramen. Sammanfattningsvis utforskades i denna avhandling phubbing arbetskamrater emellan utifrån olika metodologiska perspektiv. Vissa indikationer på att beteendet kan ha relevans för den psykosociala arbetsmiljön observerades.

List of Publications

This thesis consists of a frame for and a summary of the following three papers, which are referred to in the text by their Roman numerals:

I. Martinsson, P. & Thomée, S. (2025). Co-worker phubbing: A qualitative exploration of smartphone use during work breaks. *Scandinavian Journal of Psychology*, *66*(1), 158-173. https://doi.org/10.1111/sjop.13071

II. Martinsson, P., Larsman, P., Allard, K., Gunnarsson, M., Spante, M., & Thomée, S. (2025). Coworker phubbing and links to the psychosocial work environment among electricians in Sweden. *Scandinavian Journal of Psychology*, *66*(5), 792-812. https://doi.org/10.1111/sjop.13121

III. Martinsson, P., Allard, K., Gunnarsson, M., Thomée, S., & Larsman, P. (2026). *Coworker phubbing and psychosocial work environment factors: A longitudinal mediation study*. Manuscript submitted for publication.

This research was funded by FORTE: The Swedish Research Council for Health, Working Life, and Welfare. Ethics approval was granted by the Swedish Ethical Review Authority, protocol numbers 2020-04813 (Studies I & II) and 2022-05044-01 and 2023-04157-02 (Study III).

Contents

Figures and tables

Acknowledgements

The psychosocial work environment of a PhD student is largely shaped by one's supervisors, and I consider myself lucky in this regard. A heartfelt thank you to my main supervisor, Sara Thomée, for taking me on board from the outset. Your personal and professional generosity has made these years a pleasure. Another heartfelt thank you to my co-supervisor, Pernilla Larsman. Your support and methodological know-how have been instrumental to this dissertation.

I would also like to thank my co-authors and fellow members of the research project for welcoming me into the team and providing invaluable ideas, feedback, and company along the way. Karin Allard, Mattias Gunnarsson, and Maria Spante: it has been a pleasure, and I hope our paths will continue to cross in the future.

Claudia Bernhard-Oettel, I appreciate your excellent feedback as a senior half-time opponent and external dissertation reviewer. I hope I have been able to put most of it to good use.

I would like to extend my gratitude to several people "out in the real world" who made this dissertation possible. Niklas Enström and Peter Hjortskog (Svenska Elektrikerförbundet), Niclas Paija (Installatörsföretagen), and Magnus Persson (formerly at Installatörsföretagen) provided crucial support during the development and execution of Studies I and II, including survey development and helping our research group get in touch with participants in the electrical trade. I also thank Svenska Elektrikerförbundet for enabling Study II, and Diana Oldenburg (Head of Communications) in particular for support with outreach. Thank you also to managers, HR representatives, and employees who facilitated and/or participated in data collection across all three studies.

To my fellow doctoral students, many of whom have now ascended to the higher plane of doctorhood: you're great. Some special shout-outs are in order. David Sandberg, thanks for sharing most of the journey and for being a great junior opponent at my half-time seminar. Gustaf Glavå, Johan Green, and Maria Gröndal: whether you remember it or not, you have helped me in several ways by sharing personal and professional experiences and expertise, from

general life hacks to dissertation templates and checklists. Sean Arthur Cully, thanks for sharing books, rants, and room 588, it has been a genuine pleasure. Finally, in my sometimes-reclusive approach to the PhD process I have still noticed the energy and enthusiasm that many of you have put into organizing book clubs, pub nights, gifts, council meetings, and so on. These things are important. I don't want to accidentally exclude anyone, but you probably know who you are—thank you.

I would also like to thank some people outside of work. Jonas Hjalmar Blom: your company always brings new and improved perspectives. Lunch next week? Mom and dad, I'm thankful your support, now and over the years. To the Bauer family: cheers for never hesitating to celebrate or help out. Thanks to TLRGH, David B, Niklas, Gustaf L, and Sofia for your friendships.

Lastly, thank you to my own family. Linnéa, Frans, Alba, and the newcomer: I could have done this without you, but then what would be the point of anything?

Per Martinsson
Gothenburg, March 2026

1. Introduction

Addressing the impact of smartphones on social interactions and relationships involves striking a balance between the trivial and the consequential. On one hand, the observation that smartphones are ubiquitous and that their use pervades all aspects of life borders on the mundane by now: we all know this. On the other hand, the triviality of this observation is in itself worthy of consideration. Over a decade ago, Ling (2012) argued that mobile communication technology had receded into the background of awareness by merit of its complete centrality and pervasiveness in life. Ling (2012) suggests that, from this position of near-total integration and taken-for-grantedness, the mobile phone is no longer just a tool but a driving force in shaping social behaviors, norms, expectations, and perceptions. In the years since Ling's observation, phones have come to play an increasingly integral role, to the point that it has become hard to imagine life without them. The smartphone is an ever-present and unprecedented portal capable of instantly transporting us anywhere, anytime – figuratively speaking. Physically, of course, we are still right there. This, then, raises the question of how smartphone use affects our ability to connect with those around us. More specifically, this thesis seeks to explore the impact of smartphone use during the traditional social context of communal work breaks.

In recent years, there has been a surge in research on "phubbing" (from "phone" and "snubbing"), denoting the act of focusing on one's phone during face-to-face interactions (Chotpitayasunondh & Douglas, 2016). Most people have probably experienced a conversational partner glancing at their phone, perhaps even picking it up and interacting with it. Many have probably done this themselves. Phubbing can and does happen in a wide range of situations: in romantic relationships, among parents and children, when socializing with friends, when interacting with strangers, and in the workplace (Al-Saggaf & MacCulloch, 2019). Indeed, different branches of phubbing research have emerged, focusing on partner phubbing (e.g., Halpern & Katz, 2017; Roberts & David, 2016), parental phubbing (e.g., Pancani et al., 2021; Solecki, 2022), or supervisor phubbing (e.g., Khan et al., 2022; Roberts & David, 2017, 2020).

While the professional context has received some attention, primarily regarding how supervisors' phubbing behaviors relate to various employee outcomes, few studies have thus far explored phubbing in horizontal collegial relationships. Although it can be expected that such relationships have distinctly different characteristics compared to, for example, romantic or parent-child relationships, for many employees the workplace still constitutes an important social arena in which the quality of relationships matters. As will be dealt with in greater detail later in this thesis, there is empirical evidence for the notion that positive horizontal relationships at work are beneficial for both employees and employers. A central question, then, is whether phubbing may impact social interactions and relationships among coworkers. In this thesis, the term *coworker phubbing* encompasses both exposure to others' phubbing and engaging in such behavior oneself.

1.1. A brief history of phubbing

The term "phubbing" has unusual origins. Its inception can be traced back to a specific day, 22 May 2012, when it was coined by a team consisting of authors, a lexicographer, a phonetician, and other individuals with linguistic expertise (McCann Paris, 2014; Zimmer, 2016). The group was instructed to create a word that described the act of prioritizing one's phone over interaction with physically present individuals, and they eventually decided on "phubbing." This undertaking was orchestrated by the advertisement agency McCann as part of a campaign for the Macquarie Dictionary, Australia's national dictionary. Later the same year, a "Stop phubbing" campaign was launched by McCann, receiving some attention in media outlets around the world (McCann Paris, 2014; Zimmer, 2016).

While the attempt to launch a new word was deemed fairly successful, phubbing has not quite become a household term and the word was ultimately not included in the Macquarie Dictionary (Macquarie Dictionary Blog, 2016). However, relatively shortly after the campaign, the term was picked up by researchers who wanted to examine how smartphones were impacting face-to-face interactions. The first peer-reviewed article to employ the word was published in 2015, exploring how phubbing was related to behavioral addictions (Karadağ et al., 2015). In the following years, phubbing research became successively more prolific, and the phenomenon was approached from a

multitude of theoretical angles and within a range of different contexts (Capilla Garrido et al., 2021). These approaches and contexts will be explored in further detail at a later stage in the thesis. At this point, it suffices to conclude that while phubbing may not have fully found its way into mainstream vernacular, it has nevertheless been adopted by researchers concerned with how phones impact our relationships with those in our physical vicinity.

It should be noted that there are other terms describing similar, but not identical, behaviors. The most commonly occurring appears to be the term "technoference," another portmanteau of the words "technology" and "interference" (Frackowiak et al., 2023). As opposed to phubbing, technoference refers to distractions caused by a much wider range of devices, including smartphones but also TVs, tablets, computers, gaming consoles, and so on (Frackowiak et al., 2023). Within a business management context, the term "multicommunicating" has been proposed to describe social multi-tasking involving different modes of communication, such as face-to-face conversations, e-mail, and chats (Reinsch et al., 2008). However, multicommunicating is a more specific concept referring to the practice of using different channels of communication with the primary aim of efficiently achieving work tasks, e.g., e-mailing a client while discussing the content of the e-mail with a coworker or manager (Reinsch et al., 2008). Thus, the term "phubbing," rather than "technoference" and "multicommunicating," better captures the specific phenomenon of engaging with one's phone in lieu of interacting with physically present others. Additionally, it is the preferred terminology for this phenomenon in the research literature: at the time of writing, a ProQuest search of articles with "phubbing" and either of the words "supervisor," "boss," or "coworker(s)" in the title yielded twelve relevant peer-reviewed articles, whereas the corresponding searches for "technoference" and "multicommunicating" yielded no results.

Lastly, in this brief historical account, the notion that technology may interfere with social interactions is not new. Commenting on the role of telephones in business settings, Pierce (1977) noted that "the telephone takes precedence over the live customer; the presumption must be that a telephone customer might get away, but one waiting is hooked" (p. 174), meaning that even landline phones were often given priority over someone standing right there. More recently, but still predating the smartphone as we understand it today, it

was argued that mobile phones can impact interactions between physically proximal individuals in traditionally social settings such as college classrooms (Campbell, 2006) and restaurants (Ling, 1996). However, in contrast to previous technologies, the smartphone, with its combination of portability and connectivity, has led to a widespread state of being "permanently online and permanently connected" (Vorderer et al., 2018, p. 3). In other words, there is almost always the option of turning to one's smartphone instead of (or while) interacting with physically present people.

1.2. Phubbing and interpersonal relationships

An interesting aspect of phubbing research is that it explores how smartphone use impacts interpersonal relationships rather than just the user. Even the rare person who does not own or seldom uses a smartphone may still very well be affected by phubbing. In essence, phubbing can be viewed as a manifestation of a larger societal trend that is arguably impossible to fully opt out of, where communication technology plays an increasingly central role in people's lives.

A reasonable inquiry is whether phubbing constitutes its own category of potentially socially detrimental behavior, or whether preoccupation with a book, newspaper, or other physical object could have similar implications. In an experimental study, Vanden Abeele and Postma-Nilsenova (2018) found that phone-gazing had a more detrimental impact on social interaction than newspaper-gazing, indicating that this effect is not merely a matter of perceived inattentiveness. The authors suggested that observing someone looking at their smartphone invoked perceptions of a "virtual other" competing for the phubber's attention (Vanden Abeele & Postma-Nilsenova, 2018). Others have proposed similar explanations, suggesting that the phone may activate cognitive schemata related to the phone users' wider social network, potentially "crowding out" the face-to-face interaction (Przybylski & Weinstein, 2013). Ultimately, however, it is difficult to discern whether phubbing as a phenomenon possesses some unique quality or mechanism that separates it from other potential displays of incivility or aloofness. Perhaps the most central factor lies in the sheer prevalence and centrality of smartphones: while it is entirely thinkable that a conversational partner might become absorbed by their phone during a social interaction, it seems far less likely that they would suddenly turn on the TV or disappear into a

novel. Aagaard (2016) points to two defining characteristics of the smartphone that sets it apart from other objects and technologies. First, it is a highly personal device to which others typically do not have access. The phone user is doing *something*, but it is not clear what or for how long. Second, its highly portable nature means that there are few situations in which picking up one's phone is not a practically feasible option. This combination of opacity and convenience makes the smartphone uniquely suitable for shielding off the outside world at virtually any given moment (Aagaard, 2016).

Two main perspectives are present in the phubbing literature: phubbing and being phubbed. These perspectives need to be disentangled, as it is likely that different processes are at play when one is being subjected to a behavior by others, as opposed to when one enacts that behavior.

Concerning the perspective of engaging in phubbing (i.e., being the phubber), most research has focused on potential predictors of the behavior, such as problematic smartphone use (e.g., Chotpitayasunondh & Douglas, 2016; Ivanova et al., 2020; Karadağ et al., 2015) or personality traits (e.g., Balta et al., 2020; Erzen et al., 2021). In a meta-analysis by Arenz and Schnauber-Stockmann (2024), smartphone, internet, and social media use (particularly when problematic or addictive) were shown to correlate strongly with phubbing behavior. Other significant potential predictors included social/normative factors (e.g., being phubbed, perceived acceptance of phubbing), and trait-level factors (e.g., trait boredom, fear of missing out, depression, and anxiety). In this meta-analysis, which only considered phubbing in private life contexts, age was the only demographic variable to correlate with engaging in phubbing, although this correlation was modest. It is clear, however, that younger individuals are more prone to both general and problematic smartphone and social media use (Andone et al., 2016; Horwood et al., 2021; Olson et al., 2022), i.e., factors that are strong predictors of phubbing.

Research on exposure to phubbing (i.e., being phubbed), on the other hand, has typically examined its association with various outcomes, such as depressive symptoms (McDaniel & Coyne, 2016), lower relationship satisfaction (Roberts & David, 2016), and impaired quality of interactions (Chotpitayasunondh & Douglas, 2018a). In a recent meta-analysis of 83 studies, Nuñez and Radtke (2024) concluded that "being phubbed was consistently and

adversely associated with emotional and cognitive, social, and behavioral consequences" (Nuñez & Radtke, 2024, p. 1305). Particularly strong associations were found for certain outcomes, such as lower perceived warmth and competence, conflict, negative affect, and trust. It should also be noted that being phubbed is associated with the tendency to engage in phubbing behaviors (Nuñez & Radtke, 2024).

To summarize, research on engaging in phubbing has typically sought to explain the behavior in terms of predictors or antecedents – asking why and when its occurs. Research on exposure to phubbing has instead focused on its potential consequences. However, it should be noted that the implied causal relationship is mostly theoretical, as longitudinal designs in phubbing research are very scarce (Arenz & Schnauber-Stockmann, 2024; Nuñez & Radtke, 2024). Of the studies included in the present thesis, Study I and Study II concern both engaging in phubbing and exposure to phubbing, and Study III employs a longitudinal perspective on exposure to phubbing.

1.3. The role of collegial relationships and work breaks

Previous research has demonstrated that positive collegial relationships are of importance at both the employee and organizational levels. For employees, they are associated with overall well-being (Chou, 2015; Dimotakis et al., 2011; Rydstedt et al., 2012), career development (Ehrhardt & Sharif, 2019), and job satisfaction (Simon et al., 2010). From an organizational perspective, the quality of collegial relationships has been associated with increased job performance (Chiaburu & Harrison, 2008) as well as reduced turnover intention (Namin et al., 2021) and absenteeism (Undén, 1996).

There is a dearth of research on the role of work breaks in workplace relationships. However, some approaches to the subject have been made. In a study on Swedish and Danish dentists, Berthelsen et al. (2011) concluded that the frequency of communal breaks was positively associated with collegial support and workplace trust, suggesting that there are advantages related to the social atmosphere of the workplace. Another study found that sharing lunch breaks with colleagues was associated with increased vigor at the end of the workday (von Dreden & Binnewies, 2017). In a more general sense, the link between social

interaction and individual well-being has been repeatedly demonstrated (e.g., Cohen, 2004; Kroencke et al., 2023; Sun et al., 2020). This appears to hold true not just for interactions with friends and family but also with people with more peripheral ties (Cohen, 2004; Sandstrom & Dunn, 2014). Although more research is needed to explore the social role of work breaks, it thus seems reasonable to expect some degree of association between break time socializing and well-being. It is intuitive that the opportunity to engage in casual conversation is a key factor for developing positive collegial relationships, and that shared breaks provide such opportunities.

1.4. Phubbing in the workplace

Several studies have examined supervisor phubbing (i.e., a supervisor using his or her phone during interactions with an employee), associating it with negative outcomes such as lower trust, job satisfaction, job performance, work engagement, and perceived sense of meaning and belonging at work (e.g., Khan et al., 2022; Roberts & David, 2017, 2020; Yasin et al., 2023; Yousaf et al., 2022). Suggested mechanisms have included a lack of social reciprocation, violations of social expectations, and lack of non-verbal cues of communication such as eye contact, body language, and timely responses (Roberts & David, 2020).

Although many employees spend a considerable amount of time interacting with coworkers, and although collegial relationships appear to be important for both individuals and organizations, fewer studies have explored coworker phubbing. Koçak (2021) explored coworker phubbing and work engagement, finding no general association (except in particularly close-knit workplaces). However, being exposed to coworker phubbing was weakly associated with negative emotions and moderately associated with lower perceived relationship quality. Alagarsamy et al. (2024) found that perceived exposure to phubbing was associated with counterproductive work behavior and workplace conflict. Tandon et al. (2022) focused on employees' own phubbing behaviors, linking them to other displays of workplace incivility, fear of missing out, and exhaustion. Here, the authors suggested that fear of missing out is a driving factor of phubbing, that engaging in phubbing may be a manifestation of lower norm adherence, and that exhaustion may be a consequence of increased mental exertion involved in shifting one's attention between the phone and face-

to-face interactions. Thus, there are preliminary indications to support the notion that collegial phubbing may have negative implications similar to those of phubbing in other social contexts.

2. Theoretical Framework

The broad proposition of this thesis is that coworker phubbing during work breaks may disrupt social interrelatedness, thus undermining collegial bonds (i.e., perceived support and community) and employees' sense of connection to their work (i.e., work engagement and organizational commitment). In order to examine this potential process, two primary issues need to be considered from a theoretical angle. The first issue concerns how phubbing may relate to interpersonal relationships. The second issue concerns the role of interpersonal relationships in the workplace setting.

2.1. Phubbing and social dynamics: Exchange, violations, and displacement

Social exchange theory (Homans, 1958) provides a relevant theoretical starting point for examining the potentially disruptive impact of coworker phubbing. While a highly influential conceptual perspective in fields such as organizational and social psychological research, social exchange theory has been characterized as a complex and somewhat nebulous family of theoretical frameworks rather than as a single theory (Cropanzano et al., 2017). A detailed discussion of these intricacies falls outside the scope of the present thesis, in which social exchange theory will be treated as a singular theoretical framework. For further discussion, see Cropanzano and Mitchell (2005) and Cropanzano et al. (2017).

A core proposition of social exchange theory is that the formation and maintenance of relationships are contingent on the reciprocal exchange of social resources (Cropanzano & Mitchell, 2005). Resources may also be described as values or rewards (Blau, 1964; Homans, 1958). Examples of resources that may be of relevance in the coworker context include attention, social support, acceptance, and status (Blau, 1964). The chain of social exchange consists of three parts: 1) an initiated transfer of value from an actor to a target, 2) some type of reciprocation from the target, either behavioral or attitudinal, and 3) the resulting relationship (Cropanzano et al., 2017). In essence, social exchange theory thus

postulates that social relationships are a result of the increasing interpersonal attachment, or interdependence, resulting from the reciprocal exchange of values over time. It should also be noted that not all exchanges are rewarding, and that transactional processes may also incur perceived costs, which are proposed to weaken relational bonds (Homans, 1958). Concerning phubbing, it may disrupt the chain of social exchange in two primary ways. First, it can reduce initiated interaction, thereby undermining the starting point of the social exchange process. Second, it can diminish reciprocity, as initiated interaction attempts are not met with the expected return of attention or responsiveness.

This outlook on human relationships, based on principles of behavioral psychology (Homans, 1958), may be viewed as reductionist. However, while the proposed mechanism of social exchange is in itself rooted in simple processes, the nature of the exchanges, and the relationships that emerge from them, may be highly complex (Blau, 1964). Cropanzano and Mitchell (2005) argue that the link between social transactions and relationships is not best characterized as a unidirectional stimulus-response process. Instead, it may be understood as a feedback loop where stable patterns of interdependent exchange are incorporated into the relationship, thereby shaping its nature (i.e., from superficial to mature). In turn, the nature of the relationship exerts influence on the involved transactions, such that a more mature relationship characterized by trust and interdependence permits greater and more complex social exchange (Cropanzano & Mitchell, 2005). What constitutes a resource is thus highly dependent on contextual factors and the parties involved, ranging from the small and tangible (e.g., a friendly greeting) to the large and abstract (e.g., sense of meaningfulness and belonging).

Expectancy violations theory and the social displacement hypothesis provide complementary angles as to how phubbing may reduce social exchange. According to expectancy violations theory (Burgoon, 1993), individuals have cognitive schemas of appropriate or expected behaviors in different situations. An expectancy violation (which may be of positive or negative valence) occurs when others' behaviors do not align with these schemas, resulting in a state of arousal. The person experiencing the expectancy violation then seeks to alleviate this state by assessing the situation based on the nature of the violation and their evaluation of the violator (Burgoon, 1993). Concerning phubbing, lack of

acknowledgement, response latency, and disengaged body language may constitute expectancy violations that may lead to a negative appraisal of the other. Phrased in terms of social exchange theory, such violations of the expected norms of social exchange may lead to reduced perceived reward from the interaction, and repeated violations may then erode the inclination to engage in further social transactions: "if a person is emitting behavior of a certain kind, and other people do not find it particularly rewarding, these others will suffer their own production of sentiment and activity, in time, to fall off" (Homans, 1958, p. 599). It follows that expectancy violations may hinder the formation of new relationships (which are likely more sensitive to deviations from the norms of exchange) and potentially undermine existing ones.

The social displacement hypothesis also ties in conceptually within the umbrella of social exchange theory. The very simple tenet of the hypothesis is that time is a finite resource, and that time spent interacting with technology tends to displace or reduce time spent in face-to-face interactions (Kraut et al., 1998; Nie, 2001). This should be of particular relevance in the context of work breaks, which are clear examples of temporally limited occasions for interaction. The social displacement hypothesis complements social exchange theory and expectancy violations theory in that it may help explain how both engaging in phubbing and being exposed to phubbing relate to reduced social interaction. In contrast to social exchange theory and expectancy violations theory, it is not concerned with the content of interactions but rather the temporal aspect. In other words, time that could have been spent on interaction with physically present individuals is instead spent on something else – in the case of phubbing, interaction with one's phone. Regardless of how the involved parties feel about this (they may very well be content), the social exchange necessary to form and maintain relationships does not occur. Note that this is not, by definition, a problem – we cannot build relationships with every person we encounter. However, it is one theoretical building block that may help explain how and why smartphone use can interfere with social interactions and relationships.

2.2. Coworker relationships and the psychosocial work environment

The psychosocial work environment is a broad concept that "pertains to interpersonal and social interactions that influence behavior and development in the workplace" (Jacobs et al., 2020, p. 1803). Examples of psychosocial factors include social relationships, organizational climate, work roles, and job design (Rugulies, 2019). The present thesis does not attempt to cover the psychosocial work environment in its entirety, instead focusing on selected aspects of it. All three studies included in this thesis concern horizontal social factors, i.e., aspects of the job related to coworker relationships. Study I was exploratory in nature and did not include any predefined operationalizations of psychosocial factors. Although participants rarely used theoretically aligned terminology such as "work environment" or "social support," the central findings revolved around the nature of coworker interactions and relationships in relation to smartphone habits during breaks. In Studies II and III, this horizontal relational component was measured using two dimensions of the Copenhagen psychosocial questionnaire (COPSOQ-III) (Berthelsen et al., 2020): social support from colleagues and sense of community at work. Social support concerns "psychological or material resources that are provided to a focal individual by partners in some form of social relationship" (Jolly et al., 2021). House (1981) proposed the following four categories: emotional, instrumental, informational, and appraisal aid, indicating that social support may be directed at different needs in the recipient (Jolly et al., 2021). In COPSOQ-III, social support from colleagues is operationalized as the perceived extent to which individuals receive instrumental and emotional support from coworkers, when needed (Burr et al., 2019). Sense of community at work concerns the more general collegial climate, operationalized as perceived atmosphere, cooperation, and sense of belonging among coworkers (Burr et al., 2019). In Study II, horizontal trust was also included as a measure of coworker relationships. Horizontal trust is related to social support and is operationalized in COPSOQ-III as the perceived degree to which employees trust each other (Burr et al., 2019). This dimension was omitted from Study III due to its single-item operationalization, which made it unsuitable for longitudinal mediation within a structural equation modeling framework.

Moving beyond coworker relationships, organizational commitment was

included in both Studies II and III. Organizational commitment concerns the employees' psychological attachment to the employing organization (Mercurio, 2015). It was measured using the COPSOQ-III dimension commitment to the workplace. Although the differing terminology may introduce some confusion, Burr et al. (2019) clearly state that "[i]t is not the work by itself or the work group that is the focus here, but the organization in which one is employed" (p. 497). This dimension is operationalized as pride in the organization, willingness to recommend the employer to others, and inclination to seek employment elsewhere. In Study III, the dimension of work engagement was also included. Whereas organizational commitment concerns employees' attachment to the organization, work engagement pertains to employees' attachment to the work itself (Schaufeli et al., 2006). In COPSOQ-III, it is operationalized as perceived work-related energy, enthusiasm, and immersion (Burr et al., 2019).

The job demands-resources model (Bakker & Demerouti, 2007, 2017; Demerouti et al., 2001) provides a theoretical framework for understanding and relating aspects of the psychosocial work environment. The model posits that job characteristics can be classified as demands or resources. Demands are aspects of the job that produce mental or physical strain, whereas resources are "aspects of the job that are functional in achieving work goals, reduce job demands and the associated physiological and psychological costs, or stimulate personal growth, learning, and development" (Bakker & Demerouti, 2017, p. 274). Social support is often cited as an example of a job resource (e.g., Bakker & Demerouti, 2017; Mazzetti et al., 2023; Schaufeli, 2017). While sense of community and horizontal trust are typically not named as specific examples of resources, they align with Bakker and Demerouti's (2017) definition and are conceptually and empirically associated with social support (Burr et al., 2019; Graham et al., 2023; Pekkala et al., 2025). The job demands-resources model further suggests that job resources "instigate a motivational process leading to job-related learning, *work engagement*, and *organizational commitment*" (Bakker & Demerouti, 2007, p. 309, my italics). This proposition has received compelling empirical support (e.g., Hakanen et al., 2008; Jong & Ford, 2016; Mazzetti et al., 2023).

The concept of job resources ties in well with the previously described resources (or rewards, or values) of social exchange theory. Where social exchange theory concerns how positive workplace relationships are established

through repeated and successful instances of reciprocal exchange of social resources, the social components of the job demands-resources model concern potential downstream consequences of these resources. The job demands-resources model and social exchange theory may then further be tied to the concept of phubbing. Phubbing has been negatively linked to a range of interpersonal outcomes that may be characterized as social resources, e.g., perceived quality of interactions, trust, and sense of inclusion (Nuñez & Radtke, 2024). In the limited research on coworker phubbing specifically, exposure to phubbing has been associated with lower perceived quality of interactions (Koçak, 2021) and higher levels of conflict (Alagarsamy et al., 2024), i.e., patterns consistent with a reduction in available social job resources. In terms of social exchange theory, these findings would then indicate a lower perceived transactional value in relationships where phubbing occurs. Phubbing may be understood as a signal that can diminish social rewards, both through reduced immediate cues of social engagement (e.g., attention, eye contact, body language) and through fewer and shorter opportunities for reciprocal social exchange to take place. It may also entail higher costs of social exchange, e.g., feeling ignored or excluded. Thus, viewed from the perspective of social exchange theory, phubbing may hinder the formation of relationships or potentially undermine the strength of existing relationships.

Finally, a conceptual chain may be synthesized based on the above detailed theoretical perspectives, spanning from the micro to the meso level. At the micro level, relationships at work are established and developed through a sustained pattern of reciprocal social transactions. Over time, repeated successful social exchange fosters increased interpersonal attachment and relationships characterized by affiliation and trust, conditions conducive to the development of the meso-level constructs of social support and sense of community. In turn, perceived social support and sense of community may influence individuals' work engagement and organizational commitment. If phubbing is detrimental to social interactions, particularly by disrupting initiation and reciprocation of social exchange, it may thus affect the early, micro-level stages of this proposed chain and thereby undermine the conditions for higher-level psychosocial factors.

3. Summary of the Studies

3.1. Overall aim

This thesis sought to explore coworker phubbing during communal breaks and its links to psychosocial work environment factors. Specifically, the thesis sought to further the qualitative understanding of how coworker phubbing is perceived and understood by employees (Study I) and to examine the associations between phubbing behaviors and perceived social support from coworkers, sense of community at work, organizational commitment (Studies II and III), horizontal trust (Study II), and work engagement (Study III). By examining these aspects, the thesis seeks to increase the understanding of how the phenomenon of smartphone use in informal and social workplace situations may relate to the conditions of work. While the included studies follow a thematic progression, it should be clarified that the thesis was not an exploratory mixed-methods design in which qualitative findings from Study I were directly operationalized into quantitative measures in subsequent studies. Instead, data collection for Studies I and II was, in part, conducted in parallel. However, a key insight from Study I was that phubbing as a phenomenon was most salient during communal breaks, whereas phone use during ongoing work tended instead to be interpreted as loafing. This insight guided the decision to focus the quantitative analyses on the work-break context.

3.2. Study I

3.2.1. Aim

The aim of Study I was to qualitatively explore perceptions about coworker phubbing during communal breaks and its perceived causes and consequences.

3.2.2. Method

Participants. 25 participants were recruited from workplaces within healthcare and the electrical trade. The healthcare workers (n = 12) were

employed at four different workplaces and consisted of nurses, assistant nurses, dental hygienists, dental nurses, and other licensed healthcare personnel. They were aged between 26 and 64, with a median age of 47.5. All healthcare staff were women. The employees within the electrical trade (n = 13) consisted of 12 electricians and one technician, aged between 21 to 46, with a median age of 28. In this group, 12 were male and one was female.

Procedure. All participants were recruited via a request sent out to managers and HR personnel at the participating workplaces. This request entailed distributing a survey among the staff (in part reported in Study II) and recruiting three employees, preferably of different ages, for interviews. The interviews took place between February 2021 and March 2022. Due to the COVID-19 pandemic, most interviews were conducted via video conference tools. Toward the end of the data collection, six interviews were conducted in person at the employees' workplaces.

Data collection. A semi-structured interview guide was constructed for the study. The interview guide contained three main sections. The first section pertained to background information and sought to gain an overview of the participants' overall work setting, responsibilities, and routines, including communal breaks. The second section consisted of inquiries regarding participants' perceptions and opinions about their own and their colleagues' smartphone habits during ongoing work, meetings, and communal breaks. The third section concerned workplace policies and discussions on smartphone use. The interviews varied in duration between approximately 30 to 60 minutes and were carried out by the study's authors, Per Martinsson (n = 18) and Sara Thomée (n = 7).

During the data collection and subsequent analyses, it became apparent that communal breaks were the primary venue for potential coworker phubbing in the present sample. Barring a small minority, undue smartphone use during ongoing work or meetings was not seen as a salient issue, whereas virtually all participants could relate accounts about phubbing during breaks, although to varying extents. As a result, communal breaks became the primary focus of the study.

Data analysis. The interviews were analyzed at a semantic (i.e., "face value") level within the framework of thematic analysis. ATLAS.ti (Version

22.1.5.0) software was used for the coding and thematization of data. Following the guidelines of Braun and Clarke (2006), the analysis was iterative and involved familiarization with the data, initial coding and organization into proto-themes, continuously revising codes and themes, and revisiting the data to ensure that the abstractions were grounded in participants' accounts. Six of the interviews were coded by both authors, and the codes were subsequently inspected for consistency. The rest were coded by the first author. Both authors repeatedly discussed codes and themes throughout the process.

3.2.3. Main findings

In the analysis, five main themes were identified, of which three had two sub-themes (Table 1).

Table 1

Themes and sub-themes

1. Phubbing as a social barrier
    1.1. A silent break room?
    1.2. Annoyance and confrontation
2. The socially integrated smartphone
3. Intentional and unintentional phubbing
    3.1. Phubbing as an escape
    3.2. The allure of the smartphone
4. Navigating phubbing norms
5. Generational differences in phubbing behavior and attitudes
    5.1. The younger generation is more prone to phubbing
    5.2. The younger generation is more tolerant of phubbing

In essence, the results represented the inherent complexity of the data. The first theme identified that phubbing could be construed as a social barrier, leading to fewer and shorter interactions, less meaningful collegial relationships, and potential tensions among coworkers. Simultaneously, the second theme posited the smartphone as an integrated (and unavoidable) part of contemporary relationships, potentially contributing to discussions and facilitating the sharing

of private life events, entertaining content, or information. In the third theme, the focus was shifted to an inside perspective on phubbing, either as a conscious coping strategy or as an unintended side effect of the centrality of the smartphone in modern life. The fourth theme examined phubbing as a "balancing act" between, on the one hand, wanting to access one's smartphone to some degree and, on the other hand, wishing to adhere to social norms. Following this, the fifth theme explored generational differences in views on phubbing and smartphone use, hinting at the existence of a divide between those who were brought up surrounded by the technology and those who were not.

Study I sought to qualitatively explore perceptions of coworker phubbing, with an emphasis on the context of communal breaks. Phubbing was construed as a potential social barrier between colleagues. However, the presence of smartphones was not seen as intrinsically problematic. Perceptions about phone use were dependent on the modes of usage (e.g., solitary versus integrative) as well as norms based on workplace culture and generational belonging. While formal policies regarding break time phone use were not seen as desirable, the absence of explicit agreements left it up to the individual to navigate the phubbing landscape based on their normative perceptions, potentially resulting in tensions.

Among the limitations of the study was that the sample consisted of a restricted range of occupations. While an advantage of the sample was that the participants worked at a specific place and time (as opposed to having flexible working hours and teleworking) and had regular shared breaks, a wider range of occupations would likely have yielded different findings. Still, the present sample's working arrangement should be reasonably similar to that of a large subset of the working population. Further, the findings need to be interpreted within the Swedish context, as regulations and norms surrounding work breaks likely differ across cultures. It is possible that the recruitment process entailed a selection bias (e.g., selection of talkative, opinionated, and/or approachable individuals).

Phubbing behaviors in the workplace may constitute an obstacle to social interaction among coworkers. Simultaneously, smartphones may also be integrated into work break interactions. The topics of smartphone use and phubbing at work were understood as contingent on individual and group norms. Simply discussing the topic in the workplace may be a way of mitigating potential

friction stemming from different (unspoken) viewpoints.

3.3. Study II

Study II comprised three substudies: substudy 1a, substudy 1b, and substudy 2. Substudies 1a and 1b concerned assessment of the coworker phubbing scale in two different samples: a convenience sample and a sample of installation electricians. Substudy 2 concerned the main aim of examining the cross-sectional relationship between phubbing and included psychosocial measures.

3.3.1. Aim

The main aim of Study II was to examine associations between coworker phubbing and support from colleagues, sense of community at work, commitment to the workplace, and horizontal (i.e., at the coworker level) trust among Swedish electricians. A secondary aim, to achieve this, was to adapt and validate a coworker phubbing scale based on Roberts and David's partner phubbing scale (2016) and boss phubbing scale (2017).

The following hypotheses were tested:

H1) Exposure to phubbing is negatively associated with social support and sense of community, horizontal trust, and organizational commitment.

H2) Engaging in phubbing is negatively associated with social support and sense of community, horizontal trust, and organizational commitment.

H3) Exposure to phubbing and engaging in phubbing are positively associated.

H4) Younger employees are more likely to engage in phubbing.

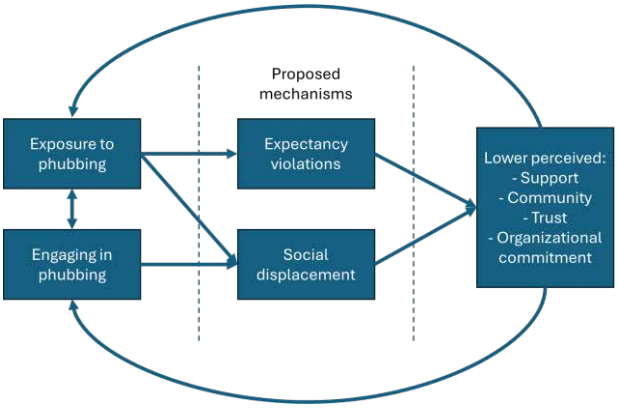
H5) Older employees report higher perceived exposure to phubbing.

H6) The associations between exposure to phubbing and support and community, trust, and commitment are stronger among older individuals than among younger individuals.

H7) The associations between engaging in phubbing and support and community, trust, and commitment are stronger among older individuals than among younger individuals.

Figure 1

Conceptual framework for hypotheses 1–3



3.3.2. Method

Participants. Two different samples were included in the study. For substudy 1a, a convenience sample of 322 participants was recruited via a range of Swedish workplaces. For substudies 1b and 2, responses were collected from 807 Swedish electricians. Here, the survey was distributed to 13476 installation electricians via the Swedish Electricians' Union (SEU). As not all e-mail addresses were valid, the survey reached a total of 12984 inboxes. Additionally, the SEU posted a link to the survey on its Facebook page and website. A total of 1028 recipients initiated the survey. Five respondents were excluded due to not meeting the inclusion criterion of working at least 10 hours per week. A total of 216 respondents were excluded due to not completing the survey, and thus not leaving final consent to participate. While the final number of responses was sufficient for all intended analyses, the response rate was low at 6.2% of the initial sampling frame. See Table 2 for demographic information about both samples.

Table 2

Demographic information about participants

	Substudy 1a		Substudies 1b & 2	
	n	%	N	%
Age group				
18 to 24 years	18	5.7	68	8.4
25 to 34 years	79	24.9	182	22.5
35 to 44 years	68	21.5	186	23.0
45 to 54 years	65	20.5	171	21.2
55 to 64 years	81	25.6	185	23.0
65 + years	6	1.9	14	1.7
Not reported	5	1.6	2	0.2
Gender				
Men	144	44.7	762	94.3
Women	176	54.7	40	5.0
Other	2	0.6	3	0.4
Job industry				
Electrical trade	107	33.2	807	100
Healthcare	98	30.4		
Dental care	32	9.9		
Manufacturing	31	9.6		
Education	28	8.7		
Retail	22	6.8		
Other/unspecified	4	1.2		
Total	322	100	807	100

Procedure. The survey was distributed using Qualtrics and included questions about the respondents and their workplaces, their own and others' smartphone behaviors, workplace policies on smartphone use, and the psychosocial factors of social support from colleagues, sense of community at work, workplace engagement, and horizontal trust. The invitation e-mail contained information about the purpose of the study, data collection and management, and terms of participation, including the right to withdraw consent

at any point.

Measures. ***Coworker phubbing scale.*** The coworker phubbing scale (CWPS) consisted of nine items, of which seven were adapted from Roberts and David's (2017) boss phubbing scale, one from Roberts and David's (2016) partner phubbing scale, and one from Chotpitayasunondh and Douglas's (2018b) generic scale of being phubbed. As these scales focused on exposure to phubbing, all items were further adapted to also capture engagement in phubbing behaviors. Additionally, the items were changed to suit the typically non-dyadic nature of work breaks (while still allowing for dyadic settings). A sample item was: "During a typical communal break, one or more coworkers glance at their mobile phone while we are talking," which was rephrased as "…I glance at my mobile phone while we are talking" in the other perspective. The response alternatives were as follows: 1 = always, 2 = often, 3 = sometimes, 4 = rarely, 5 = never.

Prior to the study, the survey was reviewed by a panel (n = 19) consisting of union (n = 2) and employers' confederation (n = 2) representatives, and a convenience sample of the working population (n = 15). In this review, panel members were asked to assess whether the questions were comprehensible, relevant, answerable, and had appropriate response options. After input from the panel, an option to answer "I don't know" was added to the CWPS items. The scale was subsequently validated both in the pilot study and main study.

Psychosocial work environment factors. Four dimensions from the Swedish version of the Copenhagen psychosocial questionnaire (COPSOQ III) (Berthelsen et al., 2020) were included: social support from colleagues (two items), sense of community at work (three items), commitment to the workplace (three items), and horizontal trust (one item). COPSOQ III has been validated across multiple occupations and cultural contexts (Berthelsen et al., 2020). As the pilot study sought to validate the structure of the CWPS in itself, the COPSOQ III items were only included in the model for the main study.

Each item consisted of a statement to which participants responded by indicating a response option. Depending on the phrasing of the item, the response options were: 1 = Always, 2 = Often, 3 = Sometimes, 4 = Seldom, 5 = Never/hardly ever; or 1 = To a very large extent, 2 = To a large extent, 3 = Somewhat, 4 = To a small extent, 5 = To a very small extent.

Data analysis. Confirmatory factor analysis was used to assess the

validity and structure of the CWPS in the pilot data. Structural equation modeling was used to examine the relationship between phubbing and social support, community, commitment, and trust in the main study. Robust maximum likelihood estimation was used for all analyses due to multivariate non-normality of the data. Full information maximum likelihood was used to handle missing values due to being able to accurately estimate model parameters (Enders & Bandalos, 2001). The scales of latent variables were set by constraining the factor loading of the first item per factor to 1. The reported fit indices were the chi-squared statistic ($\chi 2$) with its degrees of freedom (df), the robust comparative fit index (CFI), the robust Tucker-Lewis index (TLI), the standardized root mean square residual (SRMR), and the robust root mean square error of approximation (RMSEA). Due to the sensitivity of the $\chi 2$ measure in larger samples, the alternative fit indices CFI, TLI, RMSEA, and SRMR were given particular regard in assessing goodness-of-fit (Kline, 2016).

Measurement invariance is considered a prerequisite for making meaningful group comparisons, as it indicates that the measurement tools work consistently across groups (Putnick & Bornstein, 2016). As comparisons were made between younger (-34) and older (35+) participants in the main study, measurement invariance testing was conducted prior to those analyses.

3.3.3. Main findings

Substudies 1a & 1b. Although the majority of the scale was adapted from Roberts and David's (2016, 2017) boss and partner phubbing scales, which both had a unidimensional factorial structure, a two-factor structure provided a markedly better model fit in both datasets. Further, the fifth item, which was the only one adapted from Chotpitayasunondh and Douglas (2018b), loaded similarly on both factors and was therefore excluded. The first factor was proposed to represent "passive phubbing", i.e., smartphone behaviors that may pass relatively unnoticed in a work break setting (e.g., placing one's phone where one can see it). The second factor was proposed to represent "active phubbing," or behaviors which were more noticeable even in a dynamic workplace setting (e.g., looking at one's phone while talking to colleagues). The resulting CFA model where four indicators loaded on the passive phubbing factor and four indicators loaded on

the active phubbing factor displayed satisfactory goodness-of-fit indices in both datasets, concerning both exposure to phubbing and own phubbing.

Substudy 2. Assessment of the COPSOQ III psychosocial work environment factors showed that the dimensions of social support from colleagues and sense of community at work were very highly correlated (.98). Thus, these dimensions were combined into a single latent variable (support and community) to avoid multicollinearity issues.

Next, hypothesis testing was conducted. In support of H1, exposure to phubbing was significantly associated with decreases in support and community, commitment, and trust. The correlations were stronger for active phubbing. H2 (i.e., that engaging in phubbing is expected to be related to the psychosocial measures) was largely unsupported, as the only (and weak) statistically significant link was that between engaging in active phubbing and horizontal trust. In support of H3, exposure to phubbing and engaging in phubbing were generally significantly correlated, except for the association between exposure to active phubbing and engaging in passive phubbing. Concerning H4 and H5, younger participants reported engaging in notably more passive and active phubbing behaviors, and older participants reported slightly higher levels of exposure to active (but not passive) phubbing. H6 was not supported, as there were no age differences concerning the relationship between exposure to phubbing and the included psychosocial measures. H7 was generally not supported, as the only significant (but weak) age difference was that the association between engaging in passive phubbing and horizontal trust was slightly stronger among younger participants.

This study (through its substudies 1a, 1b, and 2) explored the association between phubbing behaviors during work breaks and the psychosocial work environment dimensions of support and community, commitment to the workplace, and horizontal trust. Concerning the central aim of the study, it can be concluded that there was a negative relationship between exposure to phubbing and the included psychosocial work environment factors. However, own phubbing behaviors were largely not related to the included psychosocial measures. Exposure to phubbing and engaging in phubbing were overall significantly linked, hinting at the presence of a spillover effect. There was an age difference concerning reported exposure to active, but not passive, phubbing.

There were more pronounced age differences concerning reported own passive and active phubbing. Age differences concerning the relationship between phubbing and the psychosocial measures were limited, indicating that this relationship was not considerably moderated by age.

Concerning the limitations of the study, the response rate was low at 6.2% of the initial sampling frame, which may have implications for interpretation of the results. Only one profession was included, on the one hand providing insight into that specific line of occupation, but on the other hand affecting the generalizability of the results. Lastly, the data were cross-sectional.

The findings in Study II indicate that phubbing during communal breaks is associated with a less favorable social atmosphere and workplace commitment. This lends tentative support to the notion that phubbing may undermine horizontal workplace relationships, similar to how it has been related to negative interpersonal outcomes in other venues of life. Age may be a factor as younger participants reported higher levels of engaging in passive and active phubbing behaviors, and older participants reported slightly higher levels of perceived exposure to active phubbing. However, there was no general evidence of age differences concerning the associations between phubbing and the included psychosocial work environment measures.

3.4. Study III

Study III built on the structure and findings of Study II by incorporating longitudinal measurements and a more varied sample of the Swedish working population. The longitudinal associations between exposure to phubbing and social and motivational work environment factors were examined in a structural equation modeling framework.

3.4.1. Aim

The primary aim of Study III was to examine the longitudinal influence of exposure to phubbing on organizational commitment and work engagement, with social support from colleagues and sense of community as mediating variables. Baseline associations were also examined. The following hypotheses were tested:

H1) Exposure to phubbing will be negatively associated with social support (H1a) and sense of community (H1b) at baseline (T0).

H2) Higher exposure to phubbing at baseline (T0) will predict lower social support (H2a) and lower sense of community (H2b) at T1.

H3) Exposure to phubbing will be negatively associated with work engagement (H3a) and organizational commitment (H3b) at baseline (T0).

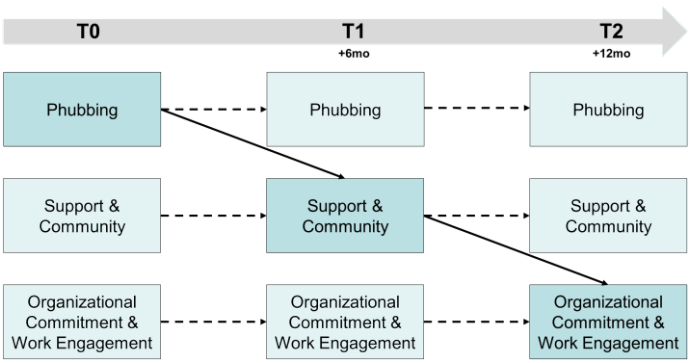
H4) Social support and sense of community will be positively associated with work engagement (H4a) and organizational commitment (H4b) at baseline (T0).

H5) Higher social support at T1 will predict higher work engagement (H5a) and higher organizational commitment (H5b) at T2.

H6) Higher sense of community at T1 will predict higher work engagement (H6a) and higher organizational commitment (H6b) at T2.

Figure 2

Proposed longitudinal mediational relationship



3.4.2. Method

Participants and procedure. A survey was sent out in three waves: at baseline, and again at 6-month and 12-month follow-ups, to a sample of the Swedish working population between the ages of 18 and 65. The first wave had a completion rate (CR) of 62% (n = 1174), the second wave had a CR of 61% (n = 1137), and the third wave had a CR of 65% (n = 1154). The data were collected via the Swedish Citizen Panel, an online panel organized by the SOM Institute, University of Gothenburg. For the present study, participants were drawn from

the probability-based part of the panel. The following inclusion criteria were used: participation in the first wave and at least one subsequent wave, working more than 20 hours per week, and taking communal breaks with colleagues at least monthly. The final sample size was 887 participants, of whom 82.8% participated in all three waves.

While the gender distribution among participants was balanced (47.4% men), age and educational level skewed high, with 72.8% being over 40 and 65.3% having at least three years of university-level education. In comparison, individuals aged 40 or above comprised approximately 54% of the working-age Swedish population in 2024 (Statistics Sweden, 2025b), and out of individuals between 25 and 64 years of age, 32% of the population had over three years of university-level education (Statistics Sweden, 2025a). In the present sample, 95.3% were full-time employees, 51.1% worked in the public sector, and 95.8% reported taking communal breaks at least on a weekly basis, with the remainder doing so at least monthly. Informed consent was collected.

Measures. ***Coworker phubbing scale.*** The coworker phubbing scale (CWPS) that was validated in two samples in Study II was used to measure coworker phubbing. The same factor structure was found using the present data. In this study, only the five items pertaining to "active phubbing," i.e., more intrusive behaviors, were used. Here, the item that cross-loaded onto both passive and active phubbing in Study II was included as an indicator of phubbing, as it displayed a satisfactory factor loading and was deemed conceptually relevant. Additionally, only exposure to phubbing (as opposed to engaging in phubbing) was included. These considerations were based on the following findings in Study II: 1) exposure to phubbing, but not engaging in phubbing, was negatively associated with the psychosocial measures, 2) exposure to active phubbing was more highly correlated with the psychosocial measures than exposure to passive phubbing, and 3) exposure to active and passive phubbing was highly correlated. Thus, it was concluded that exposure to active phubbing behaviors was the most relevant factor for exploring longitudinal associations with psychosocial work environment variables.

Psychosocial work environment factors

Four dimensions from the Swedish version of the Copenhagen psychosocial questionnaire (COPSOQ III) (Berthelsen et al., 2020) were

included: social support from colleagues (two items), sense of community at work (three items), work engagement (three items), and commitment to the workplace (three items).

Data analysis. The steps outlined by Cole and Maxwell (2003) and further developed by Little (2024) were used to test the proposed mediational relationship between exposure to phubbing and work engagement and organizational commitment, via the variables social support from colleagues and sense of community at work. First, measurement invariance was established. Next, three assumptions which are nonessential yet informative for mediational analyses were tested (Little, 2024). The assumptions of equilibrium and stability of latent means were supported in the present data, indicating that the latent constructs and their interrelations were stable over time. The assumption of zero residual covariance among endogenous latent variables was not supported, suggesting that variables not included in the model may have influenced the relationships between the latent constructs. Last, the need for additional paths (i.e., direct paths, lag-skipping autoregressive paths, and reversed causal paths) was tested (Cole & Maxwell, 2003; Little, 2024). The final process model included the hypothesized indirect mediation (i.e., phubbing → social support and sense of community → work engagement and organizational commitment), adjacent-wave autoregressive paths (i.e., all variables at T → themselves at T+1), and wave-skipping autoregressive paths (i.e., all variables at T0 → themselves at T2).

As in Study II, robust maximum likelihood estimation was used due to multivariate non-normality, full information maximum likelihood estimation was used to handle missing data, and the latent variables were scaled by setting the first factor loading per construct to 1. Reported fit indices were the scaled chi-squared statistic ($\chi 2$) along with its degrees of freedom (df), the robust comparative fit index (CFI), the robust root mean square error of approximation (RMSEA), and the standardized root mean square residual (SRMR). Little's (2024) recommendations for cut-off values regarding acceptable loss of fit in model comparisons were used.

3.4.3. Main findings

At the baseline cross-sectional level, exposure to phubbing was significantly and negatively linked to all included psychosocial measures:

organizational commitment (r = -.22), sense of community (r = -.21), social support (r = -.16), and work engagement (r = -.08). Further, there were significant positive associations between social support and work engagement (r = .31) and organizational commitment (r = .48), as well as between sense of community and work engagement (r = .45) and organizational commitment (r = .63). Thus H1, H3, and H4, concerning expected cross-sectional associations, were supported.

However, there was no evidence of the hypothesized longitudinal influence of phubbing on work engagement and organizational commitment via social support and sense of community in the present sample and time lag. Thus, H2, H5, and H6, concerning expected cross-lagged associations, were not supported.

The findings support the notion that exposure to phubbing is concurrently related to perceived social support from colleagues, sense of community, work engagement, and organizational commitment. The psychometric properties of the coworker phubbing scale and the relationships between phubbing and the psychosocial work environment variables were highly comparable to those in Study II. Where Study II focused on a single, heavily male-dominated occupation (i.e., installation electricians), the present sample was much more varied, drawn from a probability-based panel of respondents. Although the final sample in Study III was older and more highly educated than the general working population, likely due to self-selection processes commonly found in survey-based research (Keiding & Louis, 2016), the comparability of findings indicates that the coworker phubbing scale and the found cross-sectional associations are stable across occupational and educational contexts.

The proposed mediational relationship between phubbing and work engagement and organizational commitment, via social support and sense of community, was not supported given the present data and time lags. No indirect or direct effects were supported regarding any of the proposed mediational pathways. In considering the lack of longitudinal findings given the present data and timeframe, some potential limitations of the study design warrant consideration. One potential explanation is that, while perceived exposure to phubbing covaries with the included psychosocial outcomes, some unmodeled factor (e.g., general workplace atmosphere) influences all included constructs simultaneously. Another possibility is that the chosen timeframe was not

appropriate for capturing potential longitudinal effects. For example, the effects of phubbing may take place over weeks, days, or even minutes. These potential effects may then be drowned out in the six-month time lag. Including multilevel data would have allowed for examinations of different work groups or organizations, which should be of relevance as any effects of phubbing behaviors are likely to depend on context. Additionally, information on perceived supervisor phubbing may have provided further analytical venues.

In conclusion, the cross-sectional findings in Study III were consistent with those of Study II, as phubbing was negatively linked to the psychosocial outcomes at baseline. Further, the strength and direction of associations were congruent with those found in previous studies in the coworker context (Alagarsamy et al., 2024; Koçak, 2021). The lack of longitudinal effects may be interpreted in one of two ways: either phubbing does not influence the included psychosocial variables or the design of the present study failed to detect such effects. As longitudinal approaches remain scarce in phubbing research, further research is needed to assess which of these interpretations is more likely.

4. General discussion

The overall aim of this thesis was to explore the concept of coworker phubbing during communal breaks and its links to psychosocial work environment factors. Study I consisted of a qualitative exploration of phubbing among electricians and healthcare workers, seeking to generate a richer understanding of perceptions of own and others' smartphone use during breaks, including perceived causes and consequences. Key findings include that phubbing could be construed as a social barrier, negatively affecting social interactions and relationships, and also that generational belonging, modes of smartphone use, and norms were some important contextual aspects to consider. Study II quantitatively examined how exposure to, and engaging in, phubbing behaviors related to the psychosocial work environment factors of social support and community, horizontal trust, and commitment to the workplace. Additionally, it included validation of the coworker phubbing scale in two samples. The main finding was that perceived exposure to phubbing was negatively correlated with the psychosocial measures of support and community, trust, and commitment. Study III expanded on Study II by using measurements at three time-points and a diverse sample of the Swedish working population. At the cross-sectional level, the results were similar to those in Study II, with exposure to phubbing correlating negatively with social support, sense of community, organizational commitment, and work engagement. However, there was no evidence for the hypothesized mediational pathway from phubbing to work engagement and organizational commitment via social support and sense of community, nor for any of its components, given the chosen time lag and sample.

Below follows an integrative discussion of the findings. As qualitative research is especially suited for bringing to light novel perspectives, nuances, and contradictions (Aspers & Corte, 2019), the first section seeks to position phubbing as a social practice in the workplace based primarily on the findings of Study I, while integrating findings from Studies II and III where applicable. The second section will mainly explore the relationship between phubbing and the psychosocial work environment, chiefly building on Studies II and III.

4.1. Contextualizing phubbing as a social practice in the workplace

Study I adds to the phubbing literature by exploring subjective perceptions about phubbing and some of its inherent complexities, situating the phenomenon within the traditionally social context of communal breaks at work. While a range of perspectives were represented in the interviews, a recurring viewpoint was that coworker phubbing during breaks was a potential social barrier that could hamper communication, undermine social connectedness in the workplace, and give rise to social tension. The cross-sectional findings in Studies II and III, i.e., that exposure to coworker phubbing was negatively associated with social support, sense of community, horizontal trust (only Study II), work engagement (only Study III), and organizational commitment, are congruent with these qualitative findings. These findings are further consistent with social exchange theory, which posits that reciprocal exchange of social resources is necessary for forming and maintaining meaningful relationships (Homans, 1958). If phubbing during work breaks obstructs the transactional process between coworkers, it should also impact workplace social dynamics. Social exchange theory will be revisited later in the discussion, where it is integrated with other theoretical perspectives of relevance.

Study I also provides some insight into why individuals engage in phubbing behaviors in the work break setting. First, raising a social barrier may be a conscious goal of the behavior, in order to escape perceived social demands and carve out a moment of solitude during the workday. Phubbing may, from this perspective, be understood as a deliberate strategy to conserve social and psychological resources. Miller et al. (2021) suggest that the smartphone acts as a "transportal home," i.e., a figurative place of safety and privacy to which one can withdraw at virtually any time. Melumad and Pham (2020) found that smartphones can provide comfort and relieve stress, concluding that "smartphones are not unlike adult pacifiers" (p. 237). These perspectives may offer a counterpoint to the tendency to "pathologize" phubbing behavior that otherwise permeates much of the existing research (Aagaard, 2019; Frackowiak et al., 2025). For example, external factors such as demanding work or an unfavorable social environment may increase the likelihood that an individual will

turn to the privacy and comfort of their phone. In terms of social exchange theory, social transactions may be perceived as costly as well as rewarding (Blau, 1964; Homans, 1958), and the smartphone may serve as a more or less legitimate means of avoiding interactions that are anticipated to be taxing.

Second, phubbing behavior may also be an unintentional byproduct of actions directed toward some primary goal. Considering the centrality of smartphones in contemporary life, there are virtually limitless reasons to engage with them, e.g., to message a friend, plan tonight's dinner, book an appointment, seek momentary distraction through games or social media, do online banking, or perform any number of other tasks that are, in themselves, rational and understandable. Previous phubbing research has hinted at a phubbing blind spot, whereby individuals view others' phone use as more problematic than their own, or otherwise describe their own phone use as justified relative to that of others (Barrick et al., 2022; Loh et al., 2021). This tendency was observed in Study I, where participants typically contextualized their own phone use as goal-directed and rational while being more categorically critical of others' phone habits. A related observation is that individuals may continue to engage in phubbing despite denouncing it as immoral, suggesting that phone-related habits may override the conscious resolve to act in accordance with one's values (Aagaard, 2019).

Regardless of the motivations behind turning to one's phone in social settings, Miller et al. (2021) argue that, for others, "it is disturbing when someone who appears to be sitting next to us has, to all intents and purposes, abruptly retreated to some other place from which we are excluded without saying goodbye" (p. 5). In a related vein, Aagaard (2016) proposed that individuals enter a state of absent presence when engaging with their phones in social settings. Due to the personal nature of the smartphone, it is unclear to co-present others what the user is currently doing, and interactions with the user are marked by a lack of social cues of engagement such as eye contact, attentive body language, and timely responses. In other words, it is not evident to physically present others to what degree the smartphone user is actually "there" or when they will "return" (Aagaard, 2016). Taken together, the concepts of the smartphone as simultaneously a social obstacle, a refuge, and a central component of modern life demonstrate the importance of entertaining multiple perspectives at once. On one hand, the concept of phubbing as a social barrier aligns with findings in

previous research, which has linked phubbing to a range of negative relational outcomes (Courtright & Caplan, 2020; Nuñez & Radtke, 2024). On the other hand, the subjective accounts of motives for engaging in phubbing presented in Study I highlight the importance of considering its functions rather than reflexively positioning it as a problematic behavior. Not least in the involuntarily social context of work, it is understandable that someone might wish to withdraw into their phone, especially during a stressful day or when not feeling sociable. Considering, again, the centrality of the smartphone in contemporary life, it is similarly reasonable that one might want to use one's break to catch up with private matters. Yet, engaging in phubbing, whether intentionally or not, may carry social costs.

A central question, then, is that of balancing between engaging with one's phone and an awareness of the social barrier this behavior may result in. The findings in Study I touch on the importance of (shared perceptions of) social norms. Using one's smartphone during breaks was generally seen as unproblematic as long as due considerations were taken, such as "reading the room," not spending too much time on one's phone, or choosing the right moments to do so. Although such considerations are subjective in nature, the general sentiment in Study I was that most colleagues were able to recognize and adhere to them. This may further be related to the findings in Study II, where two categories of phubbing were identified – passive (i.e., subtle or unobtrusive) and active (i.e., more obvious or intrusive). Whereas both categories were associated with lower levels of the included psychosocial work environment measures, this association was more pronounced for active phubbing, indicating that a collective mindfulness of this balancing act may be of relevance to the social atmosphere. One way of achieving this may simply be to discuss the topic rather than relying on unspoken norms, not least considering that both Study I and Study II indicated that age was a factor in smartphone behaviors and attitudes.

Additionally, the findings of Study I demonstrate that the smartphone does not inherently constitute a social barrier but rather that its potential impact depends on a complex interaction between usage patterns, individual expectations, and social norms. For example, smartphones could be incorporated into social interactions and used as an extension of the conversation, e.g., to look up information on a discussion topic or share videos. Although this behavior

constitutes "phone sharing" rather than "phone snubbing," it helps demarcate phubbing as a concept by defining its limits. Returning to the etymological roots of the word "phubbing" (phone snubbing), as well as to the relatively consistent definitions used in the literature that frame it as an exclusionary behavior (Capilla Garrido et al., 2021), integrative forms of phone use fall outside its conceptual scope. This highlights a nuance that may be difficult to capture using quantitative methods, including the surveys used in Studies II and III. For example, an item such as "During a typical communal break, one or more coworkers glance at their mobile phone while we are talking" does not discern between "phone sharing" and "phone snubbing." It has been argued that norms surrounding smartphone use are changing, and that integrative co-present phone use (i.e., including the smartphone in the interaction) is becoming a more commonplace practice in face-to-face conversations (Lutz & Knop, 2020; Vanden Abeele, 2020). This perspective is potentially reflected in Study II, where younger individuals reported higher engagement in own phubbing behaviors and lower perceived exposure to coworkers' active phubbing behaviors, perhaps indicating different attitudes or sensitivity to co-present phone use during work breaks.

4.2. Phubbing, coworker relationships, and the psychosocial work environment

The previous section dealt with some of the complexities, contradictions, and nuances of phubbing, with specific consideration of the workplace context. This section, while keeping previous reasonings in mind, moves on to discuss the relationship between phubbing and psychosocial work environment factors, which is also the main contribution of Studies II and III to the phubbing literature.

Before turning to associations between examined constructs, a brief discussion of the concepts of passive and active phubbing is of relevance. During the method development phase of Study II, it became clear that the one-factor structure of phubbing found by Roberts and David (2016, 2017) did not provide a sufficient fit in the present data. A structure with two latent variables, labeled "passive" and "active" phubbing, provided a better fit. This finding was replicated in the data collected for Study III. There may be different reasons for this. One

possibility is that it reflects a difference in context, where Roberts and David (2016, 2017) examined the impact of smartphone use on dyadic interactions, whereas the typical communal break room involves more complex social dynamics with many possible constellations. Thus, behaviors that may be noticeable in a one-on-one setting (e.g., one's supervisor checking his or her phone during an interaction) are less likely to be perceived as salient in an informal group setting. Another possibility is that changing norms surrounding co-present phone use have rendered some behaviors, such as holding on to one's phone, more inconspicuous over time, regardless of setting. Returning to Study I, one of the findings was that some degree of phubbing behavior was generally viewed as acceptable. However, there existed an undefined line where it was deemed to transgress social norms, possibly analogous to the construct of active phubbing found in Study II. The passive phubbing factor may also share some conceptual overlap with the "mere presence effect" described by Przybylski and Weinstein (2013), who found that interlocutors who placed a phone in a visible location were perceived as less trustworthy and empathetic. However, a later meta-analysis found no support for this effect, with the authors concluding that "[t]he most likely explanation is that mobile phones have become so ubiquitous that we no longer notice or care about their presence" (Courtright & Caplan, 2020, p. 30). While passive phubbing also encompasses other behaviors, for example, holding on to one's phone or engaging with it during conversational lulls, it is plausible that such behaviors are also becoming largely normalized and therefore less likely to be interpreted negatively. From this perspective, continued normative shifts may have implications for the external validity of the coworker phubbing scale over time, and particularly items related to passive phubbing. One conclusion is that it may be more fruitful to focus on active phubbing, as was done in Study III. Another is that the factor structure warrants continued consideration in future studies, as smartphone norms may continue to evolve.

As hypothesized, exposure to coworker phubbing during work breaks was associated with lower perceived social support and community, commitment to the workplace, and horizontal trust in Study II. The negative associations were weak for passive phubbing and approaching moderate for active phubbing, again hinting at a meaningful distinction. Similar cross-sectional patterns were found in Study III, which utilized a more representative sample of the Swedish working

population, strengthening the generalizability of the findings. Further, the cross-sectional findings in Studies II and III largely align with previous phubbing research. While studies on coworker phubbing remain scarce, Koçak (2021) found negative links to work-related negative affect and perceived quality of interactions, and Alagarsamy et al. (2024) found associations with counterproductive work behavior and workplace conflict. More studies have examined supervisor phubbing, linking it to lower levels of trust, social inclusion, work meaningfulness, and performance (e.g., Khan et al., 2022; Roberts & David, 2017; Roberts & David, 2020; Yasin et al., 2023). Broadening the scope of comparison beyond professional relationships, meta-analytic evidence suggest that exposure to phubbing is consistently and robustly linked to adverse interpersonal consequences such as conflict, negative affect, relationship dissatisfaction, and lower trust (Courtright & Caplan, 2020; Nuñez & Radtke, 2024). While the constructs in the present thesis differ from those in prior research, the observed patterns (i.e., direction and strength of associations) point in a similar direction, indicating that they are congruent with broader evidence.

Study II included both the perspectives of engaging in phubbing ("being the phubber") and exposure to phubbing ("being phubbed"). Engaging in phubbing was not significantly associated with social support and sense of community or with organizational commitment. The only significant association was that between engaging in active phubbing and horizontal trust. This singular association should be interpreted with caution due to the weakness of the association and the fact that horizontal trust was measured using just one observed variable. In other words, individuals who experienced higher exposure to phubbing reported a poorer work environment, but individuals who themselves engaged in more phubbing generally did not. Here, some theoretical reflections can be made. A central proposition of this thesis is that phubbing may impact the psychosocial work environment. An alternative theoretical explanation, however, is that a lacking psychosocial work environment may increase the tendency to engage in phubbing. Although the cross-sectional nature of the data precludes causal inference, the findings are more consistent with the former proposition than with the alternative explanation. Specifically, it appears counterintuitive that a poor psychosocial work environment would influence others' phubbing behaviors but not individuals' own. Another theoretical

perspective is that exposure to phubbing entails involuntary subjection to behavior that may be perceived as exclusionary or uncivil, while engaging in phubbing is a matter of individual choice. This interpretation is consistent with the phubbing blind spot described by Barrick et al. (2022), whereby individuals are more likely to perceive others' phone use as problematic than their own.

Moving on from cross-sectional findings, Study III examined the proposition that exposure to phubbing may longitudinally influence work engagement and organizational commitment, mediated via social support and sense of community. However, no direct or indirect paths of influence were found given the present sample and time lag. There may be several explanations for this. One possibility is that both phubbing and the included psychosocial measures were relatively stable at the individual level over the course of the investigation, limiting the potential to detect longitudinal effects. Latent means were stable over time, as were their variances and covariances. This could indicate that the chosen time lag of six months was insufficient to capture dynamics of real change. It is possible that a shorter time lag (e.g., hours or days) would have been more appropriate to capture potential effects of phubbing on the psychosocial work environment, and it is similarly possible that a longer time lag (e.g., years) would have been able to capture macro-level interrelations between phubbing and the proposed outcomes. It is also possible that phubbing and the psychosocial variables covary due to some unmodeled factor – for example, general workplace culture may influence both phubbing propensity and perceived social support, sense of community, work engagement, and organizational commitment. Another possibility, informed by findings from Study I, is that the relationship between co-present smartphone use and psychosocial outcomes may not be straightforward. While co-present smartphone use may constitute a "social barrier" under some conditions, it may also be a tolerated or even integrated part of work break social dynamics under others. Thus, contextual and relational factors may be central to understanding when phone use gets in the way of interactions and when it is a neutral or even contributing component.

In Study II, reported exposure to phubbing and own phubbing were generally moderately correlated, except exposure to active phubbing and own passive phubbing, which were not significantly associated. Overall, this provides tentative support for some degree of phubbing "contagiousness." This finding is

well aligned with previous research (Arenz & Schnauber-Stockmann, 2024; Nuñez & Radtke, 2024). Although the causal direction again cannot be empirically examined in the current study design, some theoretical arguments can be made. Social exchange theory suggests that individuals seek balance in their social interactions by matching the investment levels of others (Blau, 1964; Homans, 1958). Previous studies have shown that observing others engaging with their phones increases the likelihood of doing so oneself (Finkel & Kruger, 2012; Maglieri et al., 2021). Further, qualitative inquiries have found that turning to one's phone when experiencing phubbing may be a strategy to maintain social symmetry (Henriksen et al., 2020; Miller-Ott & Kelly, 2017). Returning to the findings of Study I, participants reported that they tended to adapt their smartphone use depending on their colleagues' habits and attitudes, picking up on group norms and adjusting accordingly. All in all, it appears theoretically and intuitively likely that participants' phone use was affected by others rather than the other way around.

Next, the potential role of age will be addressed. In Study II, older participants reported engaging in less passive and active phubbing and being more exposed to active phubbing. The general sentiment in Study I was similar, pointing to the perception that younger employees were more preoccupied with their phones and more accepting of such behavior. These findings align with previous research, which has shown that younger individuals are more likely to engage in co-present smartphone use and perceive it as a more normalized aspect of face-to-face interaction (Andone et al., 2016; Kadylak et al., 2018; Rainie & Zickuhr, 2015). It should be noted here that the division of "younger" and "older" participants in Study II may not align with conventional distinctions, as the line was drawn at age 35. This division was made for theoretical and practical reasons. First, those aged 34 or younger were likely to have entered the workforce when smartphones were (or were becoming) widespread, meaning that they have limited experiences of a pre-smartphone work life. Second, the division allowed for sufficiently large age groups, facilitating statistical comparison.

Aside from generationally contingent norms, socioemotional selectivity theory (Carstensen et al., 1999) provides a possible theoretical perspective for understanding age differences in phubbing behaviors and attitudes. Briefly summarized, socioemotional selectivity theory posits that older individuals

prioritize social goals (i.e., interactions and relationships) more than younger individuals. In the context of work, older employees may thus be more concerned with close workplace relationships, which could be part of the explanation as to why phubbing is perceived more negatively by this group.

4.3. Aligning empirical findings with theoretical frameworks

Social exchange theory has been described as "a frame of reference within which many theories […] can speak to one another" (Emerson, 1976, p. 336). Accordingly, it offers a useful overarching framework for examining the theoretical links between coworker phubbing and social and motivational aspects of the work environment.

Study I found that phubbing could constitute a social barrier, meaning that smartphone habits were seen as a potential or actual obstacle to coworker interactions during work breaks. In cross-sectional analyses, perceived exposure to coworker phubbing was negatively associated with all included measures of the psychosocial work environment: social support from colleagues, sense of community at work, organizational commitment (Studies II & III), horizontal trust (Study II), and work engagement (Study III). Although most participants in Study I did not specifically refer to concepts such as "work environment," "social support," "organizational commitment," and so on, the findings across studies appear to be largely congruous: when perceived phubbing is high, perceived social connection is lower. These findings appear to be well aligned with social exchange theory.

However, phubbing is not a monolithic, unambiguous phenomenon but depends on situational factors. As found in Study I, perceptions of phubbing were contingent on expectations, norms, generational belonging, and context. Engaging in some degree of phubbing was seen as largely unproblematic if done "right," i.e., at the appropriate moments, with sufficient social awareness, and for a reasonable duration. This involved rather complex social processes such as reading the room, recognizing unspoken norms, and adjusting one's phone use based on who was present. Here, expectancy violations theory can provide an interpretive framework for discussing possible processes through which phubbing may undermine interactions and relationships. Expectancy violations

theory suggests that individuals enter social interactions with preconceived notions about how others are expected to behave (Burgoon, 1993). When those expectations are breached, the individual seeks to understand and position the transgression in a process which involves evaluation of the event, the other, and the context. This may result in a negative, positive, or neutral appraisal of the other's behavior. Concerning phubbing, social expectations are likely to vary considerably across individuals, contexts, and time (Vanden Abeele, 2020). Phubbing behaviors may thus be interpreted differently depending on the situation and the individuals involved, and certain behaviors may violate expectations in one context but not in others. In terms of social exchange, the impact of phubbing behaviors on the reciprocal transaction of social resources likely needs to be considered in relation to the norms and expectations of the individuals and the relationship in question.

As phubbing research has matured, the contextual aspect has received increasing attention. For example, Frackowiak et al. (2025) questioned the assumption that using one's phone in the presence of others is always perceived as negative, demonstrating that co-present smartphone use is often perceived as neutral or even positive in the specific context of romantic relationships. Similarly, Aagaard (2025) called attention to how much of the phubbing research carries and reinforces implicit and potentially moralizing normative assumptions about the behavior. Indeed, the very term "phubbing" (phone snubbing) is value-laden, implying that using a phone in the presence of others is an expression of social disregard. With this in mind, the social displacement hypothesis offers an interesting theoretical perspective that may be decoupled from at least some moral assumptions. The central premise of the hypothesis – that technology use may displace face-to-face interactions (Nie, 2001) – is simple, perhaps bordering on self-evident. Yet it may carry considerable explanatory value, not least in the context of communal work breaks, where time is a clearly limited resource. If employees spend a substantial portion of communal breaks engaging with their phones, it follows that they must spend a proportionally smaller amount of time interacting with each other. Of course, there may be special cases, such as the "phone sharing" observed in Study I, but it is difficult to argue that this constitutes the majority of typical phone use. The social displacement hypothesis is agnostic as to whether individuals actually prefer interacting with their phones

(which certainly may be true in at least some cases, as reflected in the findings in Study I). It is important to acknowledge that individuals differ in terms of sociability and need or desire for interaction and camaraderie. However, when viewed alongside social exchange theory, the resulting situation should be characterized by fewer exchanges of social resources and, by extension, a lower degree of relationship formation and maintenance.

Whereas social exchange theory concerns the transactional processes through which social resources such as social support and sense of community are formed and maintained, the job demands-resources model emphasizes the functional roles of these resources in promoting employees' well-being and work-related motivation (Bakker & Demerouti, 2007). Following this argument, if phubbing has negative interpersonal implications, it would be expected to undermine social exchange processes, thereby reducing the availability of job resources. Consequently, lower availability of such resources may be linked to reduced work engagement and organizational commitment. Again, negative associations were found between phubbing and the included psychosocial measures at the cross-sectional level. However, the lack of longitudinal paths of influence in Study III means that the causal pathways are unclear.

4.4. Methodological considerations and limitations

Although the subject of phubbing has received a fair share of research attention in recent years, coworker phubbing has not been extensively studied, and qualitative and longitudinal approaches have been relatively rare in phubbing research overall. Below, methodological considerations, including key limitations, and potential future research directions are detailed.

Study I was an exploratory qualitative study seeking to gain an understanding of subjective experiences of workplace smartphone use and phubbing rather than imposing a pre-defined framework. Qualitative research has the key strength of being able to capture new viewpoints, nuances, and paradoxes (Aspers & Corte, 2019), and the aim was to achieve rich insights about perceptions of coworker phubbing, including possible perceived causes and consequences. While this aim was largely achieved, certain aspects of the study design may be more closely considered. For instance, the sample was restricted to a narrow range of occupations, specifically, healthcare workers (e.g., nurses,

assistant nurses, dental hygienists, and dental nurses) and installation and service electricians. This may be considered a limitation, as a wider range of occupations likely would have resulted in a greater diversity of experiences and viewpoints. However, the restricted range also had some advantages in relation to the aims of the study. For example, the participants typically worked at a specific time and place, did not generally work remotely, and took regular breaks alongside coworkers. Thus, the sampling may be regarded as purposeful, providing information relevant for addressing the research questions (Palinkas et al., 2015).

Study II examined cross-sectional links between coworker phubbing and the psychosocial work environment factors, social support from colleagues, sense of community at work, horizontal trust, and organizational commitment, in a large sample of Swedish electricians. Additionally, it had the strength of including method development in two different samples, thus allowing for validation of the coworker phubbing scale across samples. The main study sample was fairly large, allowing not only for overall analyses within the structural equation modeling framework but also for comparisons across age groups. Further, confirmatory factor analysis and structural equation modeling have the advantages of being able to provide estimates of relationships between latent variables (and their relationships to their respective manifest variables), account for measurement errors, and handle missing data (Tomarken & Waller, 2005). Study III shared these methodological strengths but extended them by employing a longitudinal design, which allowed testing otherwise implicit assumptions of temporal ordering, and drawing on a probability-based survey panel.

The main sample in Study II had an even more restricted occupational range than that of Study I, focusing exclusively on electricians. However, scale validation was also conducted using a reasonably diverse convenience sample, finding the same factor structure and similar loadings. Again, the restricted range was a deliberate design choice, but the homogeneity of the main sample used to examine links between phubbing and the psychosocial work environment naturally raises questions about external validity. The low response rate additionally contributes to this issue.

In contrast, Study III was based on a considerably more diverse sample, yet it reached similar general conclusions regarding the cross-sectional links between phubbing and the examined psychosocial factors. While participants

were drawn from a probability-based panel, older and more highly educated individuals were disproportionately represented in the final sample, likely due to self-selection bias. This is a limitation, especially as Study II found that age may be associated with phubbing behaviors and perceptions. However, the similar cross-sectional findings in Studies II (single occupation, approximately upper-secondary educational level) and III (varied occupations, high average educational level) indicate that they were satisfactorily robust across occupational and educational contexts. Concerning age, a more proportional distribution would, of course, have been desirable. However, most phubbing research has involved younger participants, with Nuñez and Radtke's (2024) meta-analysis showing that the weighted mean age across 74 studies was 19.68 years. Thus, while a more representative age distribution would have been ideal, Study III contributes to a more balanced age profile in the field.

Thus far, I have only commented on the cross-sectional quantitative findings. Of course, cross-sectional analyses do not allow for causal inferences and provide only a snapshot of the interrelations among variables. Consequently, these findings cannot serve as an empirical basis for arguments of how or why variables interact. However, the similar direction and strength of the cross-sectional findings across studies provide a tentative indication that the constructs are associated: phubbing was consistently negatively associated with the psychosocial variables, and the psychosocial variables were positively associated with each other. This pattern indicates that the constructs covary as expected, although confounding variables cannot be ruled out. In other words, some unmodeled factor(s) may exert influence on all included measures simultaneously. For example, a generally positive workplace climate may cause lower levels of phubbing and higher levels of social support, work engagement, and other favorable outcomes. This issue of confounding limits internal validity and is a general characteristic of observational studies, including longitudinal ones (Carlson & Morrison, 2009).

However, longitudinal designs may allow for the establishment of temporal order and the implication (but not confirmation) of causal relationships (Little, 2024). No significant paths of longitudinal influence were found in Study III, apart from autoregressive paths (i.e., variables influencing themselves over time). Two general interpretations may be made. Either there are no temporal

relationships between phubbing and the psychosocial variables (or vice versa), or the study design did not adequately capture such relationships. Both interpretations warrant closer examination. Regarding the first, the lack of temporal links included those between social (i.e., social support from colleagues and sense of community at work) and motivational (i.e., work engagement and organizational commitment) factors. This is unexpected and weakens this general interpretation, as the process whereby job resources are proposed to influence engagement and commitment constitutes a central component of the job demands-resources model and has received empirical support (Bakker & Demerouti, 2007, 2017). The second interpretation provides a possible, but not definitive, explanation: for example, it is possible that the temporal framework with six-month time lags did not adequately capture processes of change among the measures of interest. It is conceivable that the potential impact of phubbing occurs in a considerably shorter time period, such as weeks or days. Conversely, an even longer time lag (or duration) might have been able to capture large-scale trends in phubbing behaviors and attitudes, as perceptions about smartphone use may have become stabilized.

Considering that the present report includes one qualitative and two quantitative studies, a mixed methods approach might have utilized the strengths of each approach more optimally. In practice, however, Studies I and II were conceptualized and (at least in part) executed in parallel. While aspects of Study I were considered in choices made in the main study in Study II (e.g., focusing on the break context rather than ongoing work or meetings), a more stringent mixed-methods approach could have more optimally used the insights gained from Study I in conceptualizations made in Studies II and III.

In Studies II and III, all data were collected via self-report surveys, introducing methodological limitations that, while not easily remedied, warrant consideration. One such limitation is self-report bias, whereby the measurements reflect respondents' subjective perceptions rather than directly observed behavior. For example, individuals who hold more negative attitudes toward co-present phone use may be more likely to notice and report such behavior than those with more permissive attitudes, regardless of the actual prevalence of phubbing. Further, participants' perceptions of their own phubbing behaviors may have been biased due to social desirability concerns or the phubbing blind

spot identified in previous research (Barrick et al., 2022; Loh et al., 2021). A related concern is common method bias, whereby systemic measurement error may be introduced when independent and dependent variables are measured using the same method. Although it would have been ideal to include different measurement sources, this was not feasible given the design of the studies.

Finally, the psychosocial work environment is a broad and complex concept, and the present thesis has examined only selected aspects of it. While these aspects are arguably of clear relevance in the context of coworker phubbing (i.e., social support from colleagues and sense of community as job resources, and work engagement and organizational commitment as proximal outcomes of those resources), they still represent a limited part of a larger puzzle. Further, the thesis focused on shared breaks. While this focus was grounded in theoretical and empirical considerations, it needs to be acknowledged that coworker interactions outside of the break context are highly likely to influence the job resources of horizontal support and community. This perspective was not examined. Additionally, while coworker support and sense of community are relevant job resources, there are many additional job resources not included in this thesis, such as autonomy, performance feedback, and quality of supervisor-employee relationships.

4.5. Future directions

The studies included in this thesis contribute to a largely unexplored field at the intersection of phubbing and occupational research. However, there are several avenues of potential development and improvement to consider in future research. Arguably, the most pertinent question is that of causality, or at least temporal precedence. More longitudinal approaches are needed to elucidate whether and how phubbing actually impacts interactions and relationships, both in the coworker setting and in the field in general. Concerning coworker phubbing in particular, one fruitful avenue may be to include multilevel data in order to account for both between-group and within-group variability. Ideally, such data might also include supervisor phubbing behavior in order to capture vertical as well as horizontal processes within organizations or teams. Additionally, factors not directly related to the psychosocial environment or similar abstract constructs may be included – for example, associations between exposure to phubbing and

frequency and duration of collegial interactions.

Another interesting possibility is to examine coworker phubbing experimentally. While such approaches entail higher internal validity, constructing a naturalistic experimental setting in which effects of workplace phubbing may be tested would likely be exceedingly difficult in practice. However, research in other sub-fields of phubbing has implemented experiments based on recall tasks, vignettes, and similar, which should be equally feasible in the workplace context.

This thesis examined how phubbing during work breaks may relate to psychosocial work environment outcomes. Social exchange theory was proposed as a theoretical framework for understanding how phubbing may affect interpersonal relationships, which in turn may function as job resources within the job demands-resources model. However, only selected elements of this theorized process were measured, i.e., exposure to and engagement in phubbing, as well as the included psychosocial variables. A key avenue for future research is therefore to examine the mechanisms linking phubbing to more distal outcomes, for example by including measures of social exchange processes (e.g., perceived quality of social transactions and reciprocity). Moreover, future studies would benefit from including more detailed accounts of other job resources (e.g., performance feedback, leadership, and autonomy) in order to clarify the relative contribution of phubbing to the perceived psychosocial work environment.

4.6. Ethical considerations

Ethics approval was applied for and granted by the Swedish Ethical Review Authority, protocol numbers 2020-04813 (Studies I & II) and 2022-05044-01 and 2023-04157-02 (Study III). All data were handled following the University of Gothenburg's policies for information and IT security (reg. no. V2013/414). The data are stored on a secure server provided by the university. The data will be stored for at least 10 years after the final reports have been completed. In Study I, potentially identifying details such as names, organizations, and locations were removed during transcription of the interviews, and a code was assigned for each transcript. In Studies II and III, responses were pseudonymized and no personal data were collected that could tie responses to individual persons. In all three studies, participants received written (and, in Study I, also oral) information concerning the aims of the research project and the relevant study, the terms of

participation, data management and storage, the voluntary nature of participation, and their right to withdraw consent.

Although the subject matter of the studies was not inherently particularly sensitive, ethical considerations were made in the planning and execution of the studies. Both the interviews and the survey contained questions about own and others' smartphone use at work, both during breaks and during ongoing work. Such questions could potentially be uncomfortable to answer and/or be perceived as a breach of privacy. Similarly, questions about the psychosocial work environment could cause some discomfort. In Study I, where recruitment was conducted via managers and HR staff, care was taken to underscore that participation was entirely voluntary and that the employer would receive no data or other information about participants' responses. Similarly, survey distribution for substudy 1a of Study II was chiefly mediated via managers or HR. Participants were informed that no individual responses would be shared or otherwise communicated to the employer and that all reporting involving the data would be at an aggregated group level.

There were also ethical considerations on a more general level. The studies aimed to explore a relatively new phenomenon and thereby contribute to understanding, reflection, and conversation about the role of smartphones in contemporary work life, including associations with psychosocial work environment factors. However, the studies could potentially be construed as a scrutiny or critique of employees' (and their coworkers') smartphone habits at work. In terms of how the results are received, there is a potential risk that they could be used as an argument for restricting or questioning employees' phone use during breaks. It is therefore important to emphasize that this research aims to understand and contextualize phubbing as a phenomenon in the workplace rather than to stigmatize employees or legitimate restrictive policies and practices. Hopefully, the findings will support informed discussion about how smartphones may shape social dynamics at work.

4.7. Implications

Based on the results, coworker phubbing in the context of communal breaks may have implications for the psychosocial work environment factors of social support and community at work, commitment to the workplace, and horizontal

trust. Although contingent on contextual and normative factors, phubbing may be construed as a social barrier, potentially impacting the frequency, duration, and quality of collegial interactions and, by extension, workplace relationships. As such relationships are of considerable importance for both employees (e.g., well-being and job satisfaction) and organizations (e.g., job performance and turnover intention), coworker phubbing may be a topic warranting further attention from both a research and a policy perspective. The present report has also highlighted how phubbing may be a conscious strategy to cope with perceived social demands and/or job stress. This perspective is of importance, as it points to phubbing as a possible response to perceived strain. Further, the smartphone is an increasingly integral device in many people's lives, and potential increases in phubbing behaviors, including at work, may be a consequence of this overarching trend. A possible way of mitigating the potentially negative effects of coworker phubbing on psychosocial work environment factors is to discuss the topic at various levels of the organization to bridge gaps in implicit norms, which may play a key role in perceptions of smartphone use.

4.8. Conclusions

The thesis aimed to explore coworker phubbing during breaks and its associations with psychosocial work environment factors. Both qualitative and quantitative approaches were employed. The qualitative findings highlighted some of the complexities inherent in the phenomenon: phubbing was perceived as a barrier to social interaction and collegial relationships, but also as a functional strategy to preserve resources or as a naturalized part of social situations. Identifying and adhering to situational norms was viewed as important, and phubbing behaviors and attitudes were seen as contingent on generational belonging. The quantitative studies showed that phubbing was negatively associated with all included measures of the psychosocial environment at the cross-sectional level: social support from colleagues, sense of community at work, horizontal trust, work engagement, and organizational commitment. These associations were comparable across two studies involving considerably different samples. Study III tested the often-implicit assumption of causal direction. However, no longitudinal influence of phubbing on the psychosocial work environment were observed in the present sample and six-month time lag. This may indicate either

an absence of longitudinal relationships or that the study design did not adequately capture temporal processes. In conclusion, while coworker phubbing should be understood in relation to contextual and normative factors, a higher prevalence of such behaviors may nonetheless be indicative of issues related to the psychosocial work environment.

References

Aagaard, J. (2016). Mobile devices, interaction, and distraction: A qualitative exploration of absent presence. *AI & Society*, *31*(2), 223-231. https://doi.org/10.1007/s00146-015-0638-z

Aagaard, J. (2019). Digital akrasia: A qualitative study of phubbing. *AI & Society*, *35*(1), 237-244. https://doi.org/10.1007/s00146-019-00876-0

Aagaard, J. (2025). "Are bad things bad?": Technopsychology and the problem of unacknowledged normativity. *Technology, Mind, and Behavior*, *6*(1). https://doi.org/10.1037/tmb0000160

Alagarsamy, S., Mehrolia, S., & Vinod, S. (2024). Managing coworker conflict: Investigating the effect of workplace phubbing and mindfulness on employee deviant and negligent behavior. *Evidence-based HRM: A Global Forum for Empirical Scholarship*, *13*(5), 781-798. https://doi.org/10.1108/ebhrm-04-2024-0124

Andone, I., Błaszkiewicz, K., Eibes, M., Trendafilov, B., Montag, C., & Markowetz, A. (2016). How age and gender affect smartphone usage. In *Proceedings of the 2016 ACM International Joint Conference on Pervasive and Ubiquitous Computing: Adjunct.* https://doi.org/10.1145/2968219.2971451

Arenz, A., & Schnauber-Stockmann, A. (2024). Who "phubs"? A systematic meta-analytic review of phubbing predictors. *Mobile Media & Communication*, *12*(3), 637-661. https://doi.org/10.1177/20501579231215678

Aspers, P., & Corte, U. (2019). What is qualitative in qualitative research. *Qualitative Sociology*, *42*(2), 139-160. https://doi.org/10.1007/s11133-019-9413-7

Bakker, A. B., & Demerouti, E. (2007). The job demands–resources model: State of the art. *Journal of Managerial Psychology*, *22*(3), 309-328. https://doi.org/10.1108/02683940710733115

Bakker, A. B., & Demerouti, E. (2017). Job demands–resources theory: Taking stock and looking forward. *Journal of Occupational Health Psychology*, *22*(3), 273-285. https://doi.org/10.1037/ocp0000056

Balta, S., Emirtekin, E., Kircaburun, K., & Griffiths, M. D. (2020). Neuroticism, trait fear of missing out, and phubbing: The mediating role of state fear of missing out and problematic instagram use. *International Journal of Mental Health and Addiction*, *18*(3), 628-639. https://doi.org/10.1007/s11469-018-9959-8

Barrick, E. M., Barasch, A., & Tamir, D. I. (2022). The unexpected social consequences of diverting attention to our phones. *Journal of*

Experimental Social Psychology, *101*. https://doi.org/10.1016/j.jesp.2022.104344

Berthelsen, H., Söderfeldt, B., Harris, R., Pejtersen, J. H., Bergström, K., Hjalmers, K., & Ordell, S. (2011). Collegial support and community with trust in Swedish and Danish dentistry. *Acta Odontologica Scandinavica*, *69*(6), 343-354. https://doi.org/10.3109/00016357.2011.568966

Berthelsen, H., Westerlund, H., Bergström, G., & Burr, H. (2020). Validation of the Copenhagen Psychosocial Questionnaire Version III and establishment of benchmarks for psychosocial risk management in Sweden. *International Journal of Environmental Research and Public Health*, *17*(9). https://doi.org/10.3390/ijerph17093179

Blau, P. M. (1964). *Exchange and power in social life*. Wiley.

Braun, V., & Clarke, V. (2006). Using thematic analysis in psychology. *Qualitative Research in Psychology*, *3*(2), 77-101. https://doi.org/10.1191/1478088706qp063oa

Burgoon, J. K. (1993). Interpersonal expectations, expectancy violations, and emotional communication. *Journal of Language and Social Psychology*, *12*(1-2), 30-48. https://doi.org/10.1177/0261927X93121003

Burr, H., Berthelsen, H., Moncada, S., Nübling, M., Dupret, E., Demiral, Y., Oudyk, J., Kristensen, T. S., Llorens, C., Navarro, A., Lincke, H.-J., Bocéréan, C., Sahan, C., Smith, P., & Pohrt, A. (2019). The third version of the Copenhagen Psychosocial Questionnaire. *Safety and Health at Work*, *10*(4), 482-503. https://doi.org/10.1016/j.shaw.2019.10.002

Campbell, S. W. (2006). Perceptions of mobile phones in college classrooms: Ringing, cheating, and classroom policies. *Communication Education*, *55*(3), 280-294. https://doi.org/10.1080/03634520600748573

Capilla Garrido, E., Issa, T., Gutiérrez Esteban, P., & Cubo Delgado, S. (2021). A descriptive literature review of phubbing behaviors. *Heliyon*, *7*(5), e07037. https://doi.org/10.1016/j.heliyon.2021.e07037

Carlson, M. D., & Morrison, R. S. (2009). Study design, precision, and validity in observational studies. *Journal of Palliative Medicine*, *12*(1), 77-82. https://doi.org/10.1089/jpm.2008.9690

Carstensen, L. L., Isaacowitz, D. M., & Charles, S. T. (1999). Taking time seriously. A theory of socioemotional selectivity. *American Psychologist*, *54*(3), 165-181. https://doi.org/10.1037//0003-066x.54.3.165

Chiaburu, D. S., & Harrison, D. A. (2008). Do peers make the place? Conceptual synthesis and meta-analysis of coworker effects on perceptions, attitudes, OCBs, and performance. *Journal of Applied*

Psychology, *93*(5), 1082-1103. https://doi.org/10.1037/0021-9010.93.5.1082
Chotpitayasunondh, V., & Douglas, K. M. (2016). How "phubbing" becomes the norm: The antecedents and consequences of snubbing via smartphone. *Computers in Human Behavior*, *63*, 9-18. https://doi.org/10.1016/j.chb.2016.05.018
Chotpitayasunondh, V., & Douglas, K. M. (2018a). The effects of "phubbing" on social interaction. *Journal of Applied Social Psychology*, *48*(6), 304-316. https://doi.org/10.1111/jasp.12506
Chotpitayasunondh, V., & Douglas, K. M. (2018b). Measuring phone snubbing behavior: Development and validation of the Generic Scale of Phubbing (GSP) and the Generic Scale of Being Phubbed (GSBP). *Computers in Human Behavior*, *88*, 5-17. https://doi.org/10.1016/j.chb.2018.06.020
Chou, P. (2015). The effects of workplace social support on employee's subjective well-being. *European Journal of Business and Management*, *7*(6), 8-19.
Cohen, S. (2004). Social relationships and health. *American Psychologist*, *59*(8), 676-684. https://doi.org/10.1037/0003-066X.59.8.676
Cole, D. A., & Maxwell, S. E. (2003). Testing mediational models with longitudinal data: Questions and tips in the use of structural equation modeling. *Journal of Abnormal Psychology*, *112*(4), 558-577. https://doi.org/10.1037/0021-843X.112.4.558
Courtright, J., & Caplan, S. (2020). A meta-analysis of mobile phone use and presence. *Human Communication & Technology*, *1*(2), 20-35. https://doi.org/10.17161/hct.v1i2.13412
Cropanzano, R., Anthony, E. L., Daniels, S. R., & Hall, A. V. (2017). Social exchange theory: A critical review with theoretical remedies. *The Academy of Management Annals*, *11*(1), 479-516. https://doi.org/10.5465/annals.2015.0099
Cropanzano, R., & Mitchell, M. S. (2005). Social exchange theory: An interdisciplinary review. *Journal of Management*, *31*(6), 874-900. https://doi.org/10.1177/0149206305279602
Demerouti, E., Nachreiner, F., & Schaufeli, W. (2001). The job demands–resources model of burnout. *Journal of Applied Psychology*, *86*(3), 499-512. https://doi.org/10.1037/0021-9010.86.3.499
Dimotakis, N., Scott, B. A., & Koopman, J. (2011). An experience sampling investigation of workplace interactions, affective states, and employee well-being. *Journal of Organizational Behavior*, *32*(4), 572-588. https://doi.org/10.1002/job.722
Ehrhardt, K., & Sharif, M. M. (2019). Career implications for high-quality work relationships: an SCCT test. *Journal of Managerial Psychology*, *34*(7), 474-490. https://doi.org/10.1108/JMP-10-2018-

0443
Emerson, R. M. (1976). Social exchange theory. *Annual Review of Sociology*, *2*(1), 335-362. https://doi.org/10.1146/annurev.so.02.080176.002003
Enders, C. K., & Bandalos, D. L. (2001). The relative performance of full information maximum likelihood estimation for missing data in structural equation models. *Structural Equation Modeling: A Multidisciplinary Journal*, *8*(3), 430-457. https://doi.org/10.1207/S15328007SEM0803_5
Erzen, E., Odaci, H., & Yeniçeri, İ. (2021). Phubbing: Which personality traits are prone to phubbing? *Social Science Computer Review*, *39*(1), 56-69. https://doi.org/10.1177/0894439319847415
Finkel, J., & Kruger, D. J. (2012). Is cell phone use socially contagious? *Human Ethology Bulletin*, *27*(1-2), 15-17. https://doi.org/10.22330/001c.89854
Frackowiak, M., Ochs, C., Wolfers, L., & Vanden Abeele, M. (2023). Commentary: Technoference or parental phubbing? A call for greater conceptual and operational clarity of parental smartphone use around children. *Journal of Child Psychology and Psychiatry*. https://doi.org/10.1111/jcpp.13917
Frackowiak, M., Sophie Russell, P., Vowels, M. J., & Hilpert, P. (2025). Disentangling the good, the bad, and the neutral of co-present mobile phone use: A new perspective on "partner phubbing". *Mobile Media & Communication*, *13*(2), 295-318. https://doi.org/10.1177/20501579241298271
Graham, M., Lambert, K. A., Weale, V., Stuckey, R., & Oakman, J. (2023). Working from home during the COVID 19 pandemic: A longitudinal examination of employees' sense of community and social support and impacts on self-rated health. *BMC Public Health*, *23*, Article 11. https://doi.org/10.1186/s12889-022-14904-0
Hakanen, J. J., Schaufeli, W. B., & Ahola, K. (2008). The job demands-resources model: A three-year cross-lagged study of burnout, depression, commitment, and work engagement. *Work & Stress*, *22*(3), 224-241. https://doi.org/10.1080/02678370802379432
Halpern, D., & Katz, J. E. (2017). Texting's consequences for romantic relationships: A cross-lagged analysis highlights its risks. *Computers in Human Behavior*, *71*, 386-394. https://doi.org/10.1016/j.chb.2017.01.051
Henriksen, I. M., Skaar, M., & Tjora, A. (2020). The constitutive practices of public smartphone use. *Societies*, *10*(4), 78. https://doi.org/10.3390/soc10040078
Homans, G. C. (1958). Social behavior as exchange. *American Journal of Sociology*, *63*(6), 597-606. https://doi.org/10.1086/222355
Horwood, S., Anglim, J., & Mallawaarachchi, S. R. (2021). Problematic

smartphone use in a large nationally representative sample: Age, reporting biases, and technology concerns. *Computers in Human Behavior*, *122*, 106848. https://doi.org/10.1016/j.chb.2021.106848

House, J. S. (1981). *Work stress and social support*. Addison-Wesley.

Ivanova, A., Gorbaniuk, O., Błachnio, A., Przepiórka, A., Mraka, N., Polishchuk, V., & Gorbaniuk, J. (2020). Mobile phone addiction, phubbing, and depression among men and women: A moderated mediation analysis. *Psychiatric Quarterly*, *91*(3), 655-668. https://doi.org/10.1007/s11126-020-09723-8

Jacobs, K., Hellman, M., Markowitz, J., & Wuest, E. (2020). Psychosocial work environment. In *Encyclopedia of Behavioral Medicine* (pp. 1802-1803). Springer.

Jolly, P. M., Kong, D. T., & Kim, K. Y. (2021). Social support at work: An integrative review. *Journal of Organizational Behavior*, *42*(2), 229-251. https://doi.org/10.1002/job.2485

Jong, J., & Ford, M. T. (2016). The lagged effects of job demands and resources on organizational commitment in federal government agencies: A multi-level analysis. *Journal of Public Administration Research and Theory*, *26*(3), 475-492. https://doi.org/10.1093/jopart/muv040

Kadylak, T., Makki, T. W., Francis, J., Cotten, S. R., Rikard, R. V., & Sah, Y. J. (2018). Disrupted copresence: Older adults' views on mobile phone use during face-to-face interactions. *Mobile Media & Communication*, *6*(3), 331-349. https://doi.org/10.1177/2050157918758129

Karadağ, E., Tosuntaş, Ş. B., Erzen, E., Duru, P., Bostan, N., Mizrak Şahin, B., Çulha, İ., & Babadağ, B. (2015). Determinants of phubbing, which is the sum of many virtual addictions: A structural equation model. *Journal of Behavioral Addictions*, *4*(2), 60-74. https://doi.org/10.1556/2006.4.2015.005

Keiding, N., & Louis, T. A. (2016). Perils and potentials of self-selected entry to epidemiological studies and surveys. *Journal of the Royal Statistical Society Series A: Statistics in Society*, *179*(2), 319-376. https://doi.org/10.1111/rssa.12136

Khan, M. N., Shahzad, K., & Bartels, J. (2022). Examining boss phubbing and employee outcomes through the lens of affective events theory. *Aslib Journal of Information Management*, *74*(5), 877-900. https://doi.org/10.1108/AJIM-07-2021-0198

Kline, R. B. (2016). *Principles and practice of structural equation modeling* (4th ed.). Guilford Press.

Koçak, Ö. E. (2021). Being phubbed in the workplace: A new scale and implications for daily work engagement. *Current Psychology*, *40*(12), 6212-6226. https://doi.org/10.1007/s12144-021-01635-5

Kraut, R., Patterson, M., Lundmark, V., Kiesler, S., Mukopadhyay, T., & Scherlis, W. (1998). Internet paradox: A social technology that reduces social involvement and psychological well-being? *American Psychologist*, *53*(9), 1017-1031. https://doi.org/10.1037/0003-066X.53.9.1017

Kroencke, L., Harari, G. M., Back, M. D., & Wagner, J. (2023). Well-being in social interactions: Examining personality-situation dynamics in face-to-face and computer-mediated communication. *Journal of Personality and Social Psychology*, *124*(2), 437-460. https://doi.org/10.1037/pspp0000422

Ling, R. (1996). *"One can talk about common manners!": The use of mobile telephones in inappropriate situations*. Telenor.

Ling, R. S. (2012). *Taken for grantedness: The embedding of mobile communication into society*. MIT Press.

Little, T. D. (2024). *Longitudinal structural equation modeling* (2nd ed.). Guilford Publications.

Loh, J., Strachan, J., & Johns, R. (2021). How rude is rude: An exploratory study among Australian millennials, generation 'X' and baby boomers mobile phone users. *Behaviour & Information Technology*, *40*(14), 1516-1527. https://doi.org/10.1080/0144929X.2020.1764106

Lutz, S., & Knop, K. (2020). Put down your smartphone – unless you integrate it into the conversation! An experimental investigation of using smartphones during face to face communication. *Studies in Communication and Media*, *9*(4), 516-539. https://doi.org/10.5771/2192-4007-2020-4-516

Macquarie Dictionary Blog. (2016, September 9). Ever been phubbed? https://www.macquariedictionary.com.au/blog/article/391/

Maglieri, V., Riccobono, M. G., Giunchi, D., & Palagi, E. (2021). Navigating from live to virtual social interactions: Looking at but not manipulating smartphones provokes a spontaneous mimicry response in the observers. *Journal of Ethology*, *39*(3), 287-296. https://doi.org/10.1007/s10164-021-00701-6

Mazzetti, G., Robledo, E., Vignoli, M., Topa, G., Guglielmi, D., & Schaufeli, W. B. (2023). Work engagement: A meta-analysis using the job demands-resources model. *Psychological Reports*, *126*(3), 1069-1107. https://doi.org/10.1177/00332941211051988

McCann Paris. (2014, June 26). *Macquarie "Phubbing: A Word Is Born" // McCann Melbourne* [Video]. YouTube. https://www.youtube.com/watch?v=hLNhKUniaEw

McDaniel, B. T., & Coyne, S. M. (2016). "Technoference": The interference of technology in couple relationships and implications for women's personal and relational well-being. *Psychology of Popular Media Culture*, *5*(1), 85-98. https://doi.org/10.1037/ppm0000065

Melumad, S., & Pham, M. T. (2020). The smartphone as a pacifying technology. *Journal of Consumer Research*, *47*(2), 237-255. https://doi.org/10.1093/JCR/UCAA005

Mercurio, Z. A. (2015). Affective commitment as a core essence of organizational commitment: An integrative literature review. *Human Resource Development Review*, *14*(4), 389-414. https://doi.org/10.1177/1534484315603612

Miller-Ott, A. E., & Kelly, L. (2017). A politeness theory analysis of cell-phone usage in the presence of friends. *Communication Studies*, *68*(2), 190-207. https://doi.org/10.1080/10510974.2017.1299024

Miller, D., Rabho, L. A., Awondo, P., de Vries, M., Duque, M., Garvey, P., Haapio-Kirk, L., Hawkins, C., Otaegui, A., Walton, S., & Wang, X. (2021). *The global smartphone: Beyond a youth technology*. UCL Press. https://doi.org/10.2307/j.ctv1b0fvh1

Namin, B. H., Øgaard, T., & Røislien, J. (2021). Workplace incivility and turnover intention in organizations: A meta-analytic review. *International Journal of Environmental Research and Public Health*, *19*(1), 25. https://doi.org/10.3390/ijerph19010025

Nie, N. H. (2001). Sociability, interpersonal relations, and the internet. *American Behavioral Scientist*, *45*(3), 420-435. https://doi.org/10.1177/00027640121957277

Nuñez, T. R., & Radtke, T. (2024). Is socially disruptive smartphone use detrimental to well-being? A systematic meta-analytic review on being phubbed. *Behaviour & Information Technology*, *43*(7), 1283-1311. https://doi.org/10.1080/0144929x.2023.2209213

Olson, J. A., Sandra, D. A., Colucci, É. S., Al Bikaii, A., Chmoulevitch, D., Nahas, J., Raz, A., & Veissière, S. P. L. (2022). Smartphone addiction is increasing across the world: A meta-analysis of 24 countries. *Computers in Human Behavior*, *129*. https://doi.org/10.1016/j.chb.2021.107138

Palinkas, L. A., Horwitz, S. M., Green, C. A., Wisdom, J. P., Duan, N., & Hoagwood, K. (2015). Purposeful sampling for qualitative data collection and analysis in mixed method implementation research. *Administration and Policy in Mental Health and Mental Health Services Research*, *42*(5), 533-544. https://doi.org/10.1007/s10488-013-0528-y

Pancani, L., Gerosa, T., Gui, M., & Riva, P. (2021). "Mom, dad, look at me": The development of the parental phubbing scale. *Journal of Social and Personal Relationships*, *38*(2), 435-458. https://doi.org/10.1177/0265407520964866

Pekkala, K., Oksa, R., & Oksanen, A. (2025). Sense of community, social support and social media use in the post-pandemic world of work. *Behaviour & Information Technology*, *44*(16), 4082-4095.

https://doi.org/10.1080/0144929X.2025.2461726
Pierce, J. R. (1977). The telephone and society in the past 100 years. In I. de Sola Pool (Ed.), *The social impact of the telephone* (pp. 159-195). MIT Press.
Przybylski, A. K., & Weinstein, N. (2013). Can you connect with me now? How the presence of mobile communication technology influences face-to-face conversation quality. *Journal of Social and Personal Relationships*, *30*(3), 237-246. https://doi.org/10.1177/0265407512453827
Putnick, D. L., & Bornstein, M. H. (2016). Measurement invariance conventions and reporting: The state of the art and future directions for psychological research. *Developmental Review*, *41*, 71-90. https://doi.org/10.1016/j.dr.2016.06.004
Rainie, L., & Zickuhr, K. (2015). *Americans' views on mobile etiquette*. Pew Research Center. https://www.pewresearch.org/wp-content/uploads/sites/9/2015/08/2015-08-26_mobile-etiquette_FINAL.pdf
Reinsch, N. L., Turner, J. W., & Tinsley, C. H. (2008). Multicommunicating: A practice whose time has come? *The Academy of Management Review*, *33*(2), 391-403. https://doi.org/10.5465/AMR.2008.31193450
Roberts, J. A., & David, M. E. (2016). My life has become a major distraction from my cell phone: Partner phubbing and relationship satisfaction among romantic partners. *Computers in Human Behavior*, *54*, 134-141. https://doi.org/10.1016/j.chb.2015.07.058
Roberts, J. A., & David, M. E. (2017). Put down your phone and listen to me: How boss phubbing undermines the psychological conditions necessary for employee engagement. *Computers in Human Behavior*, *75*, 206-217. https://doi.org/10.1016/j.chb.2017.05.021
Roberts, J. A., & David, M. E. (2020). Boss phubbing, trust, job satisfaction and employee performance. *Personality and Individual Differences*, *155*, 109702. https://doi.org/10.1016/j.paid.2019.109702
Rugulies, R. (2019). What is a psychosocial work environment? *Scandinavian Journal of Work, Environment & Health*, *45*(1), 1-6. https://doi.org/10.5271/sjweh.3792
Rydstedt, L. W., Stansfeld, S. A., Head, J., & Woodley-Jones, D. (2012). Quality of workplace social relationships and perceived health. *Psychological Reports*, *110*(3), 781-790. https://doi.org/10.2466/01.13.21.Pr0.110.3.781-790
Sandstrom, G. M., & Dunn, E. W. (2014). Social interactions and well-being: The surprising power of weak ties. *Personality and Social Psychology Bulletin*, *40*(7), 910-922. https://doi.org/10.1177/0146167214529799

Schaufeli, W. B. (2017). Applying the job demands-resources model: a "how to" guide to measuring and tackling work engagement and burnout. *Organizational Dynamics*, *46*(2), 120-132. https://doi.org/10.1016/j.orgdyn.2017.04.008

Schaufeli, W. B., Bakker, A. B., & Salanova, M. (2006). The measurement of work engagement with a short questionnaire: A cross-national study. *Educational and Psychological Measurement*, *66*(4), 701-716. https://doi.org/10.1177/0013164405282471

Simon, L. S., Judge, T. A., & Halvorsen-Ganepola, M. D. K. (2010). In good company? A multi-study, multi-level investigation of the effects of coworker relationships on employee well-being. *Journal of Vocational Behavior*, *76*(3), 534-546. https://doi.org/10.1016/j.jvb.2010.01.006

Solecki, S. (2022). The phubbing phenomenon: The impact on parent-child relationships. *Journal of Pediatric Nursing*, *62*, 211-214. https://doi.org/10.1016/j.pedn.2021.09.027

Statistics Sweden. (2025a). *Educational attainment in Sweden [Utbildningsnivån i Sverige]*. Statistics Sweden. Retrieved 2025-10-30 from https://www.scb.se/hitta-statistik/sverige-i-siffror/utbildning-jobb-och-pengar/utbildningsnivan-i-sverige/

Statistics Sweden. (2025b). *Population pyramid for Sweden [Befolkningspyramid för Sverige]*. Statistics Sweden. Retrieved 2025-10-30 from https://www.scb.se/hitta-statistik/sverige-i-siffror/manniskorna-i-sverige/befolkningspyramid-for-sverige/

Sun, J., Harris, K., & Vazire, S. (2020). Is well-being associated with the quantity and quality of social interactions? *Journal of Personality and Social Psychology*, *119*(6), 1478-1496. https://doi.org/10.1037/pspp0000272

Tandon, A., Dhir, A., Talwar, S., Kaur, P., & Mäntymäki, M. (2022). Social media induced fear of missing out (FoMO) and phubbing: Behavioural, relational and psychological outcomes. *Technological Forecasting & Social Change*, *174*, 121149. https://doi.org/10.1016/j.techfore.2021.121149

Tomarken, A. J., & Waller, N. G. (2005). Structural equation modeling: Strengths, limitations, and misconceptions. *Annual Review of Clinical Psychology*, *1*(1), 31-65. https://doi.org/10.1146/annurev.clinpsy.1.102803.144239

Undén, A.-L. (1996). Social support at work and its relationship to absenteeism. *Work & Stress*, *10*(1), 46-61. https://doi.org/10.1080/02678379608256784

Vanden Abeele, M. M. P. (2020). The social consequences of phubbing: A framework and a research agenda. In R. Ling, L. Fortunati, G. Goggin, S. S. Lim, & Y. Li (Eds.), *The Oxford handbook of mobile*

communication and society (pp. 158-174). Oxford University Press.
Vanden Abeele, M. M. P., & Postma-Nilsenova, M. (2018). More than just gaze: An experimental vignette study examining how phone-gazing and newspaper-gazing and phubbing-while-speaking and phubbing-while-listening compare in their effect on affiliation. *Communication Research Reports*, *35*(4), 303-313. https://doi.org/10.1080/08824096.2018.1492911
von Dreden, C., & Binnewies, C. (2017). Choose your lunch companion wisely: The relationships between lunch break companionship, psychological detachment, and daily vigour. *European Journal of Work and Organizational Psychology*, *26*(3), 356-372. https://doi.org/10.1080/1359432X.2017.1301428
Vorderer, P., Hefner, D., Reinecke, L., & Klimmt, C. (2018). Permanently online and permanently connected: A new paradigm in communication research? In P. Vorderer, D. Hefner, L. Reinecke, & C. Klimmt (Eds.), *Permanently online, permanently connected* (pp. 3-9). Routledge.
Yasin, R. M., Bashir, S., Abeele, M. V., & Bartels, J. (2023). Supervisor phubbing phenomenon in organizations: Determinants and impacts. *International Journal of Business Communication*, *60*(1), 150-172. https://doi.org/10.1177/2329488420907120
Yousaf, S., Imran Rasheed, M., Kaur, P., Islam, N., & Dhir, A. (2022). The dark side of phubbing in the workplace: Investigating the role of intrinsic motivation and the use of enterprise social media (ESM) in a cross-cultural setting. *Journal of Business Research*, *143*, 81-93. https://doi.org/10.1016/j.jbusres.2022.01.043
Zimmer, B. (2016, December 22). A new word, ‘phubbing,' catches on, thanks to a plot. *Wall Street Journal Online*. https://www.wsj.com/articles/a-new-word-phubbing-catches-on-thanks-to-a-plot-1482437806

Appendix

I. Martinsson, P. & Thomée, S. (2025). Co-worker phubbing: A qualitative exploration of smartphone use during work breaks. Scandinavian Journal of Psychology, 66(1), 158-173. https://doi.org/10.1111/sjop.13071

II. Martinsson, P., Larsman, P., Allard, K., Gunnarsson, M., Spante, M., & Thomée, S. (2025). Coworker phubbing and links to the psychosocial work environment among electricians in Sweden. Scandinavian Journal of Psychology, 66(5), 792-812. https://doi.org/10.1111/sjop.13121

III. Martinsson, P., Allard, K., Gunnarsson, M., Thomée, S., & Larsman, P. (2026). Coworker phubbing and psychosocial work environment factors: A longitudinal mediation study. Manuscript submitted for publication.