AMCIS 2022 Proceedings

SIG CNOW - Changing Nature of Work with ICT

Aug 10th, 12:00 AM

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Aleksandre Asatiani
University of Gothenburg, aleksandre.asatiani@ait.gu.se

Vasili Mankevich
University of Gothenburg, vasili.mankevich@ait.gu.se

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Online Discourse on Remote Work Challenges During the Pandemic – Trace Data Study and Future Directions

Emergent Research Forum (ERF)

Aleksandre Asatiani
Swedish Center for Digital Innovation,
University of Gothenburg
aleksandre.asatiani@ait.gu.se

Vasili Mankevich
Swedish Center for Digital Innovation,
University of Gothenburg
vasili.mankevich@ait.gu.se

Abstract

The COVID-19 pandemic led to governments imposing restrictions on mobility and socialization of people. These restrictions pushed organizations to hastily adopt remote work. As pandemic evolved unpredictably, there was uncertainty surrounding duration and conditions of remote work. This forced workers to continuously adjust to deal with emergent challenges. This context provides a natural setting to study an impact of prolonged remote work at scale. We explored online discourse on Reddit about remote work during the period from January 2020 and January 2022. We used topic modeling of trace data to inductively understand the shared structures of meaning, and categorize it into seven themes. This was followed up with preliminary qualitative analysis of top posts in each theme. We identified three research directions for the future work.

Keywords

Remote work, work-life conflict, trace data, online communities, topic modelling, covid-19.

Introduction

The COVID-19 pandemic led to restrictions on mobility and socialization of people. These restrictions pushed organizations to hastily adopt remote work. A significant portion of knowledge workers in the developed nations had some experience working from home, before the pandemic (Milasi et al. 2020). Nevertheless, a rapid switch to remote work caught many organizations, and workers off-guard. Furthermore, the prolonged nature of the pandemic turned a temporary switch to remote work, into a longer-term arrangement. This forced workers and organizations to develop remote work practices ad-hoc. The recent surveys and reports suggest that the switch to remote work had an overall positive or neutral impact on workers' well-being and productivity. Yet, as workers stayed home longer, issues of personal wellbeing, morale, engagement, and retention have emerged (Parry et al. 2021). This highlights the importance of issues of effective management of the remote work to ensure long-term sustainability, which has been raised in the earlier research (O'Leary et al. 2020).

Research on the impact of remote work yields contradictory results, revealing the paradoxical nature of the phenomenon. For example, flexibility afforded by remote work could serve as a source of job satisfaction and better work-life balance for some (Asatiani and Penttinen 2019), while leading other remote workers down to the dark path of overworking, social isolation, and disengagement (Eddleston and Mulki 2017). It has also been suggested that the relationship between the time spent working remotely and impacts of remote work is complex and non-linear (Virick et al. 2010). Overall, it appears that the probability of negative effects emerging increases the longer workers are subjected to continuous remote work (Perry et al. 2018). The pandemic offers researchers a unique opportunity to investigate the effects of prolonged remote work, at the unprecedented scale. Motivated by the developments in pandemic-induced switch to remote work we ask the following research question: *What does online discourse on managing challenges of prolonged remote work during the pandemic reveal for future research?*

Managing remote work challenges

Early research viewed remote and co-located work as a dichotomy. However, as remote work practice evolved, and complex hybrid work arrangements emerged, dichotomic view was no longer sufficient. More recently, remote work is often conceptualized and measured through boundaries (Chudoba et al. 2005; O'Leary et al. 2020). Boundaries separate remote workers' home and work domains (Hecht and Allen 2009). In a co-located work, the two domains are clearly separated by two boundaries, space and time. Workers physically traverse spatial and temporal boundaries, away from home, to arrive to a workplace and perform their jobs. In remote work, boundaries need to be traversed virtually (Chudoba et al. 2005), requiring workers to adjust their behavior. Moreover, when working remotely boundaries between home and work domains become blurry, leading to behavioral spillovers between the two (Hecht and Allen 2009). Spillovers occur when a behavior from one domain intrudes the other. Such intrusion often arises from demands from home and work competing for worker's time, leading them to prioritize one, over the other. Blurred boundaries and spillovers bring fore the issue of work-life balance (WLB). WLB is defined as a functioning balance between a worker's temporal, emotional, and behavioral demands at home and at work (Sarker et al. 2010). Spillovers lead to a conflict between home and work domains that undermines WLB. A lack of balance between the two domains is referred to as work-life conflict (WLC) (Sarker et al. 2010). Weaker boundaries between home and work domains in remote work, makes the issue especially prominent (Hecht and Allen 2009).

Remote workers experiencing WLC adopt coping strategies. Coping strategies are commonly built on the framework of segmentation–integration continuum (Eddleston and Mulki 2017). According to this framework, workers can be positioned on the continuum based on their coping strategy. At the segmentation end of the continuum workers strive to complete separation of home and work domains, establishing a clear immutable boundary between the two. For example, remote workers may set strict working hours, and devote a separate room to work in their house. Thus, WLC is resolved by emulating spatial and temporal separation of work and home. At the integration end, workers fully combine home and work domains, to a degree where activities from the two domains are indistinguishable from worker's perspective. Such integration may take a shape of professionalized home, where home activities (e.g. childcare) are reconceptualized as work tasks slotted in the work schedule between work meetings (Lapierre et al. 2016). In this approach conflict is resolved through full erasure of a boundary between two domains. Strategies at the extreme ends of the continuum are rare in practice, meaning that workers often synthesize two extremes. One's ability to adopt a specific strategy is contingent to their context. For example, segmentation strategies may not be viable for workers with major childcare responsibilities (Eddleston and Mulki 2017). Factors such as management support for flexibility and job autonomy could also shape the coping strategy. However, coping strategies do not endure. Prolonged remote work could have a negative impact on well-being and productivity, as WLC reemerge over time (Virick et al. 2010). Prolonged, uninterrupted remote work can weaken coping mechanisms and established work routines, as worker context evolves. The COVID-19 pandemic provides a natural setting to study a prolonged remote work at scale. As pandemic evolved unpredictably, there was uncertainty surrounding duration and conditions of remote work. This pushed workers to continuously adjust their coping strategies to deal with emergent challenges. Online discourse during the pandemic captures this evolution, providing a fertile ground for studying WLC for a prolonged period.

Method

To address our research question, we analyzed trace data from Reddit. As a social media platform, Reddit is unique in that its users interact within thematic communities –"subreddits" – user-created spaces where participants share information, ask questions, and interact on defined subjects. The combination of being a massively popular social media website and having user-defined thematic subreddits made Reddit a popular target for research. There has been a wide range of studies relying on Reddit for investigation of online discourses, for example in the medicine (Weber et al. 2022), and financial markets (Padalkar 2021). Analyzing trace data from an online community is not without its own challenges. As with other kinds of organic data, there are concerns about the validity of the inferences made by the researcher. In particular, data generation, collection, and parts of the analysis may be outside the control of the researcher working with trace data (Xu et al. 2019). In addition, interpreting trace data (such as a post on social media) might present a challenge to a researcher only focusing on the one type of data (Howison et al. 2011). The prevalent

practice to address these validity concerns has been to mix various types of datasets and analysis techniques (Whelan et al. 2016). In the spirit of these recommendations, we have combined an increasingly relevant computational topic modeling (Hannigan et al. 2019) with qualitative work – zooming in and out approach (Gaskin et al. 2014).

The data was collected from the three remote work subreddits: "remotework", "WFH", and "workfromhome". These three thematic communities were included because of their explicit focus on remote work. For example, the description of "workfromhome" subreddit stated that it was *"a Reddit community for those who work from home! Helpful tips and discussions on productivity, the lifestyle, and making it all work! This is not a job board."*[1] Subreddits of similar theme, but with much broader focus (e.g. freelance, passive income) were excluded. We have collected in total 13971 posts from the three subreddits that covered a span between 2020 and 2022. After cleaning data from spam, non-English, and ads for jobs that can be done online, we have focused the analysis on 4352 posts. We have used topic modeling to inductively understand the discourse "exploring classification as shared structures of meaning that are not formally materialized" (Hannigan et al. 2019). Collected data was prepared for analysis: we have removed the most common English words, punctuation, and stemmed the words to their basic forms. Next, using the topic modeling optimization algorithm, we identified the number of topics that would separate all posts into groups with the most internal cohesion but most distinction externally (Deveaud et al. 2014). Studying the resulting topics qualitatively by the author team revealed the high proportion of job ads, promotions, and the topics related to physical products (e.g. "best standing desks") were eliminated from the analysis. Running the topic modeling algorithm over a reduced dataset that only included people's experiences revealed a more nuanced topic separation. The seven resulting topics were coded and described by the author team based on the examples of the top-scoring posts within each topic, reaching consensus over the overarching theme within each topic.

Results

During the investigated period we have observed an overall increase in the number of discussions related to remote work. Predictably, the volume of conversations exploded after Covid-19 was declared a pandemic by WHO and many employers instituted a work from home policy. The volume of discussions aligned with the major milestones during the pandemic. There was a relative decrease in discussion activity after the first vaccines were approved and vaccination began. This was the time when some employers gradually asked employees to come back to work (spring-summer of 2021). There was a dramatic increase after the announcement of the Delta variant and its resistance to vaccines, and later after emergence of Omicron variant. See Figure 1(a) for details.

Among discussions related to people's experiences with remote work (31% subset of the total), using topic modeling we inductively identified seven coherent topics (see Figure 1(b)). The first topic – **Family distractions** and productivity – is characterized by people discussing how people manage work, children, care for elderly relatives, chores during remote work. For example, in *"Am I overreacting?"* (March 2020, r/workfromhome), a user expressed challenges of caring for elderly relatives while negotiating remote work policy with the employer. In the second topic – **Probing** – the users experiencing isolation were exploring the boundaries of the appropriate in search of emergent remote work norm: e.g. *"Friendzoned Ex friend/coworker possibly muting me during meeting"* (May 2020, r/WFH). The third group of posts focused on **Questions** that emerge in the remote work scenarios and negotiations with the employers: *"Offered to get my old job back, $13k more but it's in person"* (June 2021, r/WFH). In the **Sharing advice** topic category, people mostly spread tips and tricks, especially from the external resources: *"How to keep Productivity while working from home… The Pomodoro Technique"* (June, 2020, r/workfromhome). In contrast, within the **Time management** topic the discussion were often about scheduling and combining various responsibilities: *"If you worked 20 hours a week how would you split the time?"* (January, 2021, r/workfromhome). Some discussions were related to overall **Wellbeing self-reflection**: *"Micromanaged or just paranoia?"* (October 2021, r/workfromhome). Finally, the last group of discussions concerned with the experiences of **Working environment at home,** i.e. technology and ergonomics issues: *"How can my BF and I share our desk?"* (December 2021, r/workfromhome). As seen in Figure 1(b),

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that while all topics increased in volume over time, the greatest proportional gain was in **Questions** and **Time Management.** Somewhat surprisingly, the topic of **Probing** related isolation, stress, and searching for the emergent norms, only appeared after the pandemic (perhaps indicating that it is a sign of involuntary remote work arrangements) and gained significantly over time.
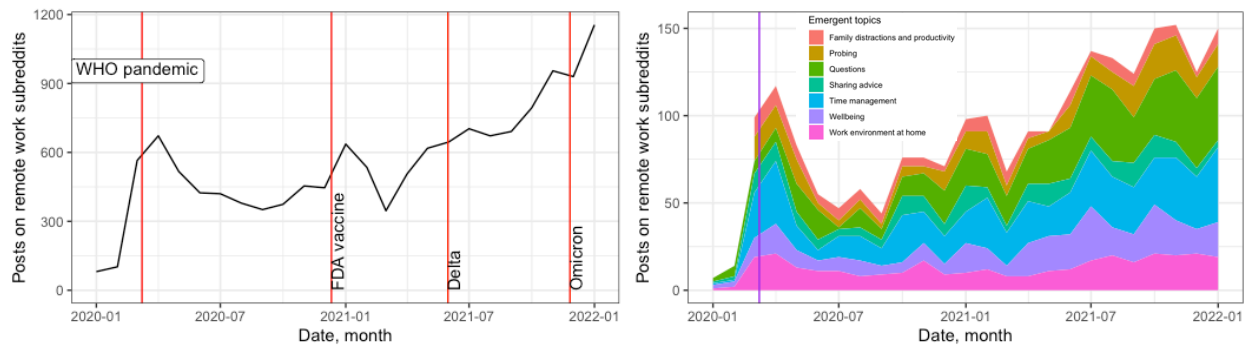

Figure 1: (a) Pandemic timeline and remote work discussion activity (b) timeline of topics in remote work experience discourse

Future Research Directions

Our results suggest three promising research paths. First, identified topics and their prominence over time, affirms earlier findings in the literature. This includes issue of spillover (family distractions and productivity), work environment at home, and evolving work practices (wellbeing and time management). Longitudinal qualitative analysis of the posts can yield a deeper insight into specific instances of these challenges, and their prevalence over time. Such analysis could also provide insight into strategies to manage WLC in remote work. This research path could help strengthen theoretical foundations on impacts of prolonged remote work.

Second, our exploratory analysis reveals a topic of probing which includes a discourse not typically discussed in research. This discourse suggests that on the one hand negative social dynamics (e.g. harassment, social ostracization) may develop in remote work environments over time. What makes such dynamics unique in a remote work context is their ambiguity. A lack of socialization and information asymmetry makes negative behavior less transparent and less obvious. On the other hand, these factors combined with social isolation fuel anxiety, suspicion, and paranoia in remote workers. We propose to pursue this research further from the prism of the pandemic discourse of remote work experience to better define and conceptualize this phenomenon, as it would provide important pointers for future workplaces.

Lastly, our study sets out to continue the emergent tradition combining qualitative analysis with machine learning methods (Lindberg 2020). We have leveraged topic modeling for exploring inductive systems of shared meaning in the online discourse (Hannigan et al. 2019), using it as a grounded approach for the foundation in the theory development (Berente and Seidel 2014). While significant questions of construct validity remain (Howison et al. 2011; Xu et al. 2019), we position this approach to be a promising direction for inquiry into global phenomena (Müller et al. 2016).

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