

The psychological threat of being declared non-essential during the COVID-19 pandemic: effects on professional identification

Declared non-essential during the COVID-19 pandemic: effects on professional identity

Ruth van Veelen^{1*}, Johanna S. W. Kruger², Belle Derks², Francesca Manzi,³ Melissa Vink²,
Mara A. Yerkes⁴

¹Department of Sustainable Productivity and Employability, TNO, Organization for Applied Scientific Research, The Netherlands

²Department of Social, Health and Organizational Psychology, Utrecht University, The Netherlands

³Department of Management, London School of Economics and Political Science, United Kingdom

⁴ Department of Interdisciplinary Social Science, Utrecht University, The Netherlands

Author note

Ruth van Veelen: ORCID: <https://orcid.org/0000-0002-2609-1997>

Johanna S. W. Kruger: ORCID: <https://orcid.org/0000-0002-0660-0715>

Belle Derks ORCID: <http://orcid.org/0000-0002-0038-4134>

Francesca Manzi: <https://orcid.org/0000-0002-6074-4680>

Melissa Vink ORCID: <https://orcid.org/0000-0001-83930368X>

Mara A. Yerkes: ORCID: [0000-0002-5480-4878](https://orcid.org/0000-0002-5480-4878)

*Correspondence concerning this article should be addressed to Ruth van Veelen, TNO,

Netherlands Organization for Applied Scientific Research, Sylviusweg 71, 2333 BE Leiden,

The Netherlands. Email: ruth.vanveelen@TNO.nl

Abstract

This study applies a social identity lens to show that, during the COVID-19 pandemic, the Dutch government's classification of occupations and labor market sectors as *essential* versus *non-essential* imposed a professional identity threat to those categorized as non-essential. Specifically, we hypothesized (1) that non-essential workers in the Netherlands would report lower professional identification (PI) during the pandemic relative to essential workers; (2) that non-essential workers' mandatory shift to working from home and working fewer hours would (partially) explain their lower PI relative to essential workers; (3) that gender differences would emerge in the impact of categorization as (non-)essential worker on PI levels; and (4) that lower PI would negatively relate to work productivity and performance during the pandemic. Empirical evidence based on three cross-sectional datasets sampled among the Dutch working population during two peak waves of COVID-19 infections and national lockdowns (May/June 2020; Study 1: N = 371; November/December 2020, Study 2: N = 467; Study 3 = 735) all confirmed that non-essential workers reported lower PI relative to essential workers. The explanation for this outcome varied at different stages in the pandemic. Study 1 results showed that lower PI among those declared non-essential was partially explained by non-essential workers' work location (home-bound) and reduced work hours, but only during the 1st peak wave. As the pandemic continued (2nd peak wave; Study 2 and 3), gender differences emerged, with more negative consequences of being classified non-essential for women than men. Non-essential workers' lower PI levels were also associated with lower work productivity and performance. These findings underscore the importance of understanding social identity processes during the pandemic. We discuss socio-psychological ramifications of government regulations to control health crises, given how these may inadvertently undermine the professional identity of over half a working population in society.

Introduction

“A Pandemic Future - Has COVID-19 Proved Your Job Meaningful or Meaningless? In Other Words, Do You Have A 'Bullshit Job'?” – Christopher Roosen, 2020

“Never again should we accept the notion of a non-essential worker” - Michael Jary, 2021

On March 11, 2020, the World Health Organization declared a global pandemic of the COVID-19 virus (WHO, 2020). In order to curb the spread of the COVID-19 virus, governments across the world implemented “lockdowns” and social distancing regulations, which restricted workers from traveling to work, or from working at all. Exceptions to these rules were those workers classified as “essential workers”. The International Labor Organization defined essential workers as people in occupations and providing services “without which the safety, health or welfare of the community [...] would be endangered or seriously prejudiced” (International Labour Organization (ILO), n.d.). While the list of essential occupations varied between countries, typical essential occupations were in healthcare, food and agriculture, public utilities and safety, transportation, and education (Zimpelmann et al., 2021). About one-third of the working population in Western countries was classified “essential”. By default, the majority of the working population was classified as “non-essential” – people in occupations viewed as not crucial or vital enough to contribute to the functioning of economies or societies during the crisis. The Netherlands (where the current study was situated) was one country where the government published a list with essential occupations on the government website and relied strongly on this classification to impose regulations to curb the spread of the COVID-19 virus in 2020 (FNV, 2023).

Global health crises (e.g., black plague, 1350; Spanish Flu, 1918; SARS, 2003; COVID-19), extreme events (e.g., wars, natural disasters), and digital revolutions (e.g., Artificial Intelligence) can historically be understood as external shocks to the system. These

external shocks can completely change or reshape the organization of work and life as we knew it (Morgeson et al., 2015). Since 2020, the COVID-19 pandemic and governmental response strategies like the classification of work as either essential or non-essential, sparked a scientific research agenda on how such strategies might change the organization and meaning of work, work-life balance, and work productivity (Kramer & Kramer, 2020; Stephens et al., 2020). Notably, the significant body of empirical research emerging since the outbreak of the pandemic has primarily focused on the position of essential workers and how they were disproportionately affected by the COVID-19 outbreak, for example in the extra workload they took on, the health risks they faced, the additional work stress, or difficulties with work-life balance (Copel et al., 2023; Correia & Almeida, 2020; Denning et al., 2021; Gilleen et al., 2021; Hennekam et al., 2020; Keen & Santhiveeran, 2023; Luo & Mao, 2022; Rose et al., 2021; Vagni et al., 2020; Van Der Goot et al., 2021). These studies have also pointed to the gendered nature of essential work (Carli, 2020; Fisher & Ryan, 2021; Leo et al., 2022; Meekes et al., 2023; M. A. Yerkes et al., 2020) suggesting that in some contexts, being an essential worker could provide women with greater household bargaining resources to counter pre-pandemic gender unequal divisions of work and care (André et al., 2023).

By contrast, little empirical attention has been devoted to the majority of the working population: the two-thirds of workers declared “non-essential” (see Ouwerkerk & Bartels, 2022; van Zoonen et al., 2022 for exceptions). The absence of attention for this share of the working population is problematic, because it remains unclear what the psychological consequences are when a government considers a large share of occupations to be less important than others during global health crisis. Therefore, more insight into the socio-psychological ramifications of governmental crisis management that classifies entire fields of the labor market as *non-essential* is important, because such official categorization can inadvertently pose risks to the vitality of labor market sectors. Specifically, workers may

have felt psychologically threatened in their meaning-making and self-esteem as a professional due to governmental response strategies that classified their occupation as *non-essential*, potentially leading to disengagement and lower productivity. Thus, gaining insight in how pandemic or other crisis-based government approaches directly affected the professional lives of many people is important. Although intended to facilitate immediate support of the work done by essential workers, such approaches may ultimately backfire by impeding sustainable work productivity and innovation in entire segments of the labor market, thereby placing the economic welfare position of post-COVID 19 societies at risk (Dekker, 2023).

We take a social identity approach (Tajfel & Turner, 1979; Turner et al., 1987) to investigate how people with paid employment were psychologically affected by the government-imposed categorization of occupations and labor market sectors as “non-essential” versus “essential” during the COVID-19 pandemic. Our aim is to learn how being categorized into each of these groups affected people’s sense of self-worth and self-esteem as a professional, i.e., one’s professional identification (PI). We test the hypothesis that being labeled a non-essential worker (as compared to an essential worker) led to lower levels of PI during the COVID-19 pandemic, and that this was partially driven by the concomitant mandatory changes in work circumstances (i.e., working from home, working fewer hours) during peak waves of infections and lockdown restrictions. Importantly, given that the COVID-19 pandemic generally had a more negative effect on women’s economic position compared to men’s (OECD, 2021), we also test for gender differences in the psychological response to being declared a (non-)essential worker. We also investigate potential downstream consequences of this classification on workers’ perceived work productivity and work performance during the pandemic.

We relied on cross-sectional survey data collected in the Netherlands, where 3.2 (36%) of the 8.9 million individuals in the Dutch working population (aged 15-64) were declared essential workers in March 2020 (CBS, 2023). This classification meant that, by default, a majority of 5.7 million workers (64%) was classified as non-essential. The target population was Dutch women and men in paid employment who were living with their romantic partner for at least 6 months¹. Three data samples were collected during two crucial time periods in the Netherlands in 2020. Sample 1 was collected between May and June of 2020; during the aftermath of the 1st wave of COVID-19 infections and lockdown mandates in the Netherlands (Yerkes et al., 2020). Samples 2 and 3 were both collected during the 2nd wave of COVID-19 infections in November and December of 2020, when the Netherlands was on the verge of entering the 2nd and most restrictive lockdown of the pandemic. See Figure 1 for a timeline of the COVID-19 regulations in the Netherlands in 2020.

A social identity approach to being declared a (non-)essential worker

Social identity theory posits that people categorize the world into groups to which they do (ingroup) and do not (outgroup) belong. Identification with ingroups fulfills belongingness and self-esteem needs via positive distinctiveness: seeing one's own group as positively distinct from relevant outgroups (Tajfel & Turner, 1979; Turner et al., 1987). Within this framework, one's professional identity can be understood as a crucial social identity. On average, people spend 90,000 hours, or one-third of their lives, at work (Gettysburg College, n.d.). As such, who we are as professionals – our professional identity – is one of the most central parts of our self-concept, and provides us with a sense of livelihood, social status, financial security, and self-actualization (Ashforth et al., 2008).

¹ This study was part of a larger data collection effort. The restrictions with regard to relationship status were necessary for other questions examined in the overarching project.

People's professional identity also shapes our self-views, informs our values and belief systems, and regulates our behaviors. The central role that professional identity plays in people's lives is further demonstrated by how often people introduce themselves by referring to the work that they do, e.g., "I am a musician", "I work as an engineer", "I am in tech". These statements are an expression of one's professional identity and indicate the psychological importance people assign to their profession (Hekman et al., 2009). As such, we define professional identification (PI) as the extent to which people attach emotional significance to, and derive self-esteem from, being a member of a professional group (Greco et al., 2022; Hogg & Abrams, 1990; Rubin & Hewstone, 1998).

Like other social identities, a professional identity can be threatened when there is a perceived risk that the status, meaning, or recognition of one's professional group may be devalued or marginalized in some way (Branscombe et al., 1999a; Steele et al., 2002). A threat to any social identity hampers the opportunity for group members to derive positive distinctiveness from their group which, in the context of work, is cause for negative emotions (Cottrell & Neuberg, 2005) and withdrawal or retreat, particularly among minority group members at work (van Os et al., 2015). Prior research has largely focused on factors that instigate professional identity threat from *within* the organization (e.g., imposed administrative change, multi-disciplinary team work, and digital innovation (Jussupow et al., 2022; McNeil et al., 2013; Mitchell et al., 2022)). We extend research on social identity dynamics at work by arguing that being categorized as a non-essential worker by the government during the COVID-19 pandemic potentially poses a threat to one's professional identity, undermining the value and meaning of one's work at a societal level.

Social scientists' early reflections on the potential impact of governmental policy measures to control the COVID-19 outbreak have speculated that the categorization of work as essential versus non-essential may affect the status and meaning of different forms of

employment (Kramer & Kramer, 2020; Stephens et al., 2020). In the Netherlands, the distinction between essential and non-essential work during COVID-19 was made official through a list of essential occupations and sectors published on the government website. In government communications that followed, occupations and sectors not listed as essential were referred to as ‘non-essential’. This classification was used as an important communication tool for coordinating outbreak response strategies. Specifically, non-essential workers were mandated to work (almost) entirely from home, were not allowed to bring their children to daycare or to school (i.e., they were required to home-school their children and generally did not qualify for emergency forms of schooling or care; see Yerkes et al., 2020). As a result, many non-essential workers faced significant reductions in work hours or the loss of work entirely as certain sectors were closed during lockdowns (e.g., the service industry). In contrast, many essential workers shouldered additional workloads, spent more time working, and had access to (emergency) daycare and school (although few workers made use of these services during the first lockdown in March 2020; Yerkes et al., 2020). Moreover, during the first lockdown (spring 2020), essential workers across the globe received public appreciation as a token of respect for the risks and extra efforts taken on to keep society functioning (e.g., collective applause, media attention; Wikipedia, 2021).

We argue that being labeled a “non-essential worker” during the COVID-19 pandemic may have served as a social identity threat to the majority of people whose professional group was abruptly devalued. Experimental intergroup research in the social identity tradition has demonstrated that when people are categorized into one of two arbitrary groups in a laboratory-setting (e.g., the “red” group versus the “blue” group) not only do they attach meaning to their novel ingroup, they derive positive distinctiveness merely on the basis of the ingroup label (e.g., “I like people in the red group better than in blue”; Spears, 2002). Furthermore, learning that their ingroup scored lower than the outgroup on a task result in a

social identity threat response -both physiologically in the form of elevated blood pressure, and psychologically in the form of lower group self-esteem measures (D. Scheepers & Ellemers, 2005a). Applied to a real intergroup context, such as when governments categorized workers as essential versus non-essential during the COVID-19 pandemic, we argue that the devaluing label “non-essential” induces a threat to one’s professional identity. Conversely, the status-elevating label “essential”, might boost one’s professional identity.

To understand how people may lose or gain a sense of identity through professional group membership, it is important to also distinguish between private and public PI (Luhtanen & Crocker, 1992). Private PI describes how people derive positive feelings from being a member of a professional group (e.g., “I feel proud to be a [profession]”). Public PI refers to people’s assessment of how *others* evaluate the professional group to which they belong (e.g., “In general, others respect the [professional] group that I am a member of”). Public PI thus captures an individual’s perception of the social standing or status of their profession in the societal hierarchy. It is likely that the government-imposed categorization of work as “non-essential” versus “essential” not only affected private PI, but also the perceived level of recognition and respect that professional groups receive through the eyes of the public, resulting in a change in perception of what society perceives as more or less important work during the pandemic (Kramer & Kramer, 2020; Zhou, 2005). Notably, many occupations categorized as “non-essential” during the COVID-19 pandemic are typically high-status and well-paid jobs (e.g., consultancy & financial services, ICT and technical sector, commercial and public relations professions, managers), while occupations categorized as “essential” are typically low-paid, low-status jobs (e.g., health care, domestic work, education, transport, and the food industry; (CBS, 2023). The sudden shift in social value and status of the formerly less visible “essential” occupations (i.e., “from zero to hero”, Hennekam et al., 2020) versus the devalued status of the formerly more visible “non-

essential” occupations during the COVID-19 pandemic is therefore expected to not only undermine non-essential workers’ private, but also public PI relative to essential workers.

Taken together, we hypothesize that people categorized as non-essential workers by the Dutch government report lower private and public PI levels during the COVID-19 pandemic compared to people categorized as essential workers (*Hypothesis 1*).

Changes in work circumstances as an explanatory factor

Aside from the negative effect that mere social categorization as a “non-essential” worker may have on people’s PI during COVID-19, the accompanying mandatory stay-at-home measures may be an explanatory mechanism through which professional identities of non-essential workers were undermined. In contrast to essential workers, non-essential workers were *obligated* by the government to work from home during the lockdowns in 2020. As a result, many workers had to drastically reduce their work hours (for example to home-school their children) and, in some industries, could not work at all (Yerkes et al., 2022). The time we spend on our work and the live interactions we have with co-workers serve as important social tools in validating and positively affirming our professional identity. Indeed, professional identities are not only cognitive manifestations of who we are as professionals, they are also enacted through meaningful social interactions with co-workers, one’s physical presence at a workplace, joint rituals, symbols, and organizational spaces (Ashforth & Schinoff, 2016; Pratt et al., 2006). Empirical work shows that social validation through face-to-face interaction with co-workers serves as an identity cue affirming what “we as professionals feel, think and do”. These identity cues help to build and maintain a strong and positive work identity, both explicitly (e.g., “You did a great job today”) and implicitly (e.g., non-verbal cues such as facial expressions, eye-contact, body language; Smith et al., 2013a). Social identity theory further suggests that a strong sense of shared identity through meaningful interaction can help coordinate efforts and manage threats (Jetten et al., 2012)

especially during difficult times like the COVID-19 pandemic (Jetten et al., 2020). When opportunities for a shared professional identity are absent or abruptly taken away--as was the case with government work-from-home mandates—negative outcomes may ensue. For example, studies conducted during the pandemic showed that the lack of opportunity to go to the workplace-imposed challenges to self-organization and work accomplishment (Raišienė et al., 2020), maintaining a healthy work-life balance (Palumbo, 2020), and to overall work well-being (Song & Gao, 2020).

Building from this work, we argue that the absence of identity cues typically needed to socially validate and affirm one's professional identity (e.g., reduced working hours and increased working from home during the COVID-19 pandemic) are likely to explain the expected lower PI levels among those in non-essential compared to essential occupations. Specifically, we hypothesize that compared to essential workers, non-essential workers' higher levels of working from home and lower number of work hours during COVID-19 (partially) explains their lower PI levels (*Hypothesis 2*).

Gender differences

Research across OECD countries shows that the COVID-19 pandemic had a stronger negative impact on women's economic position compared to men's. Although national differences exist, on average, women were disproportionately more likely to have lost their job, reduced work hours and reduced earnings during COVID-19 than men (OECD, 2021). In the Netherlands, gendered employment effects during the pandemic were contingent upon the classification as an essential or non-essential worker. Specifically, although women and men in essential occupations were affected quite similarly, women in non-essential occupations were more likely than men to lose their job and experienced greater reductions in work hours and earnings (Meekes et al., 2023). Given these gender differences in employment outcomes among non-essential workers, we sought to account for potential gender differences in the

relationship between the classification of occupations as (non-) essential and workers' professional identification levels.

Observations from economic and sociological studies show that whereas women in essential occupations garnered greater bargaining power within households (e.g., with fathers taking on more care tasks during initial stages of the pandemic; André et al., 2023), women in non-essential occupations were more harshly affected by the closing of childcare facilities and schools, the inability to outsource household tasks, and the additional informal care tasks during COVID-19 than men (Alon et al., 2022; Fuchs-Schündeln et al., 2020). Importantly, the increased time spent in household work reduced women's labor market participation more steeply than men's (André et al., 2021a; Del Boca et al., 2020; Hupkau & Petrongolo, 2020; Oreffice & Quintana-Domeque, 2021). Socio-psychological research on gender role beliefs and stereotypes (Fisher & Ryan, 2021) can help to explain why government measures taken to regulate the health crisis led to these unequal work and care outcomes for men and women. Social role theory (Eagly & Wood, 1999) describes how conventional feminine gender roles prescribe women to be highly communal 'homemakers', displaying traits such as warmth and concern for others, taking the role of caregiver inside the home, and taking up low-status positions in society. In contrast, conventional masculine gender roles prescribe men to be highly agentic 'breadwinners', displaying traits such as stoicism and strength, taking the role of provider outside the home, and in high-status positions in society.

Although nearly half of Dutch heterosexual couples wish to break with these conventional gender roles, stating they prefer to have an equal division of paid and unpaid work, very few couples manage to do so (Ministry of Finance, 2020). Currently, women in the Netherlands are the world champions in working part-time (OECD, 2019), and the societal-level endorsement of traditional gender role beliefs helps to sustain women's historically marginalized position in paid employment relative to men in the Netherlands

(Van der Brakel et al., 2020). Also, gender role beliefs are tenacious and difficult to change. In fact, Dutch couples who do break with societal conventions (i.e., where the woman holds a higher status position and earns more than the man) tend to face social penalties (i.e., women are perceived as the “cold” and “bitchy” one in the relationship; men are perceived as the “weak” one; and people expect non-traditional couples to be less satisfied with their relationship compared to traditional couples; Vink et al., 2022, 2023).

Women’s more precarious labor market position may cause their professional identity to be more susceptible to external shocks such as the COVID-19 pandemic, relative to men. Moreover, under conditions of crisis and uncertainty, people are especially likely to fall back on implicitly held belief systems and heuristics to guide their behaviors (Tversky & Kahneman, 1974; Sherman et al., 2000). In such cognitive crisis mode, gender role beliefs may be more likely to guide feelings and decisions, and help justify gendered behaviors where women take over any additional household and care-taking roles, while men secure the financial position of the household (Brescoll et al., 2013; Fisher & Ryan, 2021). Drawing from this, we argue that during the COVID-19 crisis, women who were classified as non-essential workers were “pushed back” into their gender traditional homemaker role, imposing a greater threat to their professional identity. In contrast, men in non-essential occupations were likely shielded by their male breadwinner role, which may have protected them from experiencing identity threats of being declared non-essential, thus reporting less loss of professional identity during the COVID-19 pandemic than women. Our third hypothesis explores this idea, by testing whether women in non-essential occupations report lower PI levels compared to men in non-essential occupations during the COVID-19 pandemic (*Hypothesis 3*).

Professional Identification and Work Outputs

Since the beginning of the COVID-19 pandemic, several studies have investigated the impact of COVID-19 restrictions on work-related well-being (Carnevale & Hatak, 2020), stress, and productivity (Kumar & Nayar, 2020). For example, Dutch professionals who reported working (almost completely) from home during the COVID-19 pandemic also reported having more difficulty in their work concentration and focus levels (Oude Hengel et al., 2022). While it is reasonable to expect that practical resource and time-based obstacles lead to poorer work outcomes, the extent to which work outcomes are also affected by the psychological constraints one experiences when one's job is deemed non-essential remains unknown. In this research we seek to shed light on this matter. We examine whether, above and beyond changes in work hours and location, people's self-worth and meaning-making as a professional (i.e., their professional identity) was undermined by the label "non-essential" worker and test whether this psychological process, in turn, affects work-related outcomes.

Following social identity theory, the extent to which people identify with their profession, team, or organization forms a strong motivational driving force for their work attitudes and behaviors (Ellemers & De Gilder, 2022). In socio-psychological models, social identification is typically understood as a *process* variable to explain why and for whom contextual changes or cues instigate an affective or behavioral response (Jetten et al., 2012; van Veelen et al., 2016; van Zomeren et al., 2018). Similarly, in organizational psychology, Input – Process – Output (IPO) models are used to explain how contextual cues in the work environment spark or hamper a positive professional self-image, a sense of belonging, or validation of professional competence (Ashforth et al., 2008; Ashforth & Schinoff, 2016; Smith et al., 2013). Contextual cues have also been found to foster or thwart important work outcomes such as performance and motivation. For example, people with a strong professional identity report higher job satisfaction and show lower turnover intentions

(Cowin et al., 2008; Greco et al., 2022; Zhang et al., 2021). In sum, the higher people's professional identification, the more positive work outcomes typically are.

If, as we contend, working in a non-essential (vs. essential) occupation induces lower PI, negative work-related outcomes are likely to ensue. Thus, as a final step, we seek to explore the downstream consequences of professional identity threats during the COVID-19 pandemic for people's work productivity and performance. Our proposed model follows an Input – Process – Output explanation (see Figure 2). Specifically, we predict that when a person's job is declared "non-essential" (contextual cue/ input), their positive professional identity is undermined (identity process), which in turn leads to negative consequences for work productivity and performance (output; Hypothesis 4). In addition, depending on whether we find gender differences in relation to Hypothesis 3, we will explore the gendered nature of lower PI on work outcomes.

The present research

The current research is set out to investigate whether being declared a non-essential (vs. essential) worker during the COVID-19 pandemic acts as an identity threat on women's and men's professional identification and subsequently impairs perceived work productivity and performance. We rely on three cross-sectional survey studies conducted among the Dutch population during two time periods in 2020 when the COVID-19 pandemic was at its peak. Studies 1 and 2 were datasets collected via convenience sampling, and the Study 3 dataset was a sample representative for the Dutch population, collected via the Longitudinal Internet studies for the Social Sciences (LISS) panel². Data collection for Study 1 (N = 371) took place during two weeks in May/June 2020 at the end of the first lockdown. Participants reflected on their work and family situation during the first lockdown. Data collection for

²LISS CenterData Research Institute Tilburg is a platform where researchers can collect representative data for the Dutch population or a subpopulation based on a probability-based sample drawn from population registers. After 1 year, data will be made publicly available in the Data Archive: <https://www.lissdata.nl/Home>

Study 2 (N = 476) and Study 3 (N = 735) took place in November/December 2020, during the second peak wave of COVID-19 infections. Open methods, minimal data, and results to support the findings can be found on OSF (link will be available once this manuscript is published). Supplementary Tables can be found via this [link](#).

Study 1

Following the outbreak of COVID-19 in the Netherlands, the initial wave of infections was met with a national lockdown on March 12, 2020, which included measures such as work-from-home mandates as well as school and childcare closures (see Yerkes et al., 2020 for an overview). At this time, the government categorized occupations and labor market sectors into two categories: *essential* (see FNV, 2023 for exhaustive list) and *non-essential*. By mid-May, COVID-19 infections began declining and lockdown restrictions were gradually rescinded (Figure 1; see also Zimpelmann et al., 2021 for response stringency during COVID-19 infection waves in 2020 in the Netherlands). End of May 2020 our survey was launched, asking participants to reflect on work-life experiences during the 1st lockdown.

Method

Participants

In total N = 540 Dutch participants started the survey. Inclusion criteria for data analyses were that participants provided active informed consent to participate (N = 540), self-identified as either a man or a woman (N = 519), indicated whether they had an essential profession or not (N = 382) and filled out the questions about professional identification (N = 371). This resulted in an analytical sample of N = 371, with N = 260 women (70.1%) and N = 111 men (29.9%), with a mean age of 39.16 ($SD = 8.49$; range 23-65 years). The sample was highly educated with N = 266 (71.7%) holding a university degree or higher, N = 84 (22.6%) holding a degree from an applied university, and N = 21 (5.7%) holding a degree in

vocational education or lower. All participants were involved in a romantic relationship, on average for $M = 15.41$ years ($SD = 7.93$; range 1-45 years) and $N = 266$ (71.7%) had minor children currently living at home. All participants had paid work and, prior to the pandemic, worked for at least 8 hours a week, and on average $M = 35.59$ ($SD = 8.72$) hours a week. Most participants ($N = 343$) indicated deriving their income from employment, either as dependent employees, $N = 42$ or self-employment, and another $N = 8$ indicated relying on sources other than employment for their income (multiple answers were possible).

Procedure

An online survey built in Qualtrics was distributed among participants via convenience sampling and snowball techniques, based on soliciting participants via the personal and professional network of authors involved in the project. The study was approved by the Ethics Committee of the Faculty of Social and Behavioral Sciences of Utrecht University (FETC 20-272). People were approached to participate via email and via social media (e.g., LinkedIn, Twitter, Facebook). Study information communicated that adults currently in a romantic relationship and living together for a minimum of 6 months were eligible for the study. Participants could access the survey directly, by clicking on a link in the message. The survey was available for 2 weeks from May 27th until June 8th, 2020.

At the start of the survey, participants read and agreed to an informed consent form, ensuring amongst others, anonymity, voluntary nature of participation, safety of data storage, the right to withdraw at any time and contact information. Subsequently, two filter questions were asked to ensure all participants were involved in a romantic relationship and had been living together for at least 6 months. Participants who did not adhere to these criteria were directed to the end of the questionnaire. Subsequently, all participants filled out demographic questions and questions about their work situation, relationship, living situation and task divisions at home. Participants were first asked all questions pertaining to their situation

before the COVID-19 pandemic (in the Netherlands, this was before March 12th, 2020) and subsequently they were asked to think about their current situation, during the COVID-19 lockdown (end of May/June 2020) and answer questions in relation to this current situation.

In total, it took 15-20 minutes to complete the survey. Respondents were not rewarded for their participation. Insight into all survey questions can be requested from the first author. Although sample size was not pre-determined (the goal was as large a sample as possible), sensitivity analyses on the most comprehensive statistical model in the current research (a 2 by 2 Gender (between-subjects: man versus woman) x Profession (between-subjects: essential versus non-essential) by 2 (within-subjects: pre and post COVID-19) by 1 model (covariate) indicated that the study was sufficiently powered to detect small to medium effect sizes (e.g., Cohen's $f^2 \geq 0.08$; $\alpha = 0.05$, $1 - \beta = 0.80$).

Measures

Participants were first asked to think about their life before the COVID-19 pandemic, and subsequently to think about their life since the COVID-19 pandemic and first lockdown began in March 2020.

Work Location. Participants were asked how much they were working from home versus outside their home before and since the COVID-19 pandemic with the question: "[Before] Since the COVID-19 pandemic, [did] do you mainly work from home or outside your home?" (1 = I work[ed] completely from home; 7 = I work[ed] completely outside my home).

Work Hours. In an open-ended question, participants were asked how many hours a week they worked before (i.e., Before the COVID-19 pandemic, approximately how many hours a week did you work?) and now (i.e., Approximately how many hours a week are you still able to actually work since the COVID-19 pandemic?).

(Non-)Essential Worker. Participants were asked if they had been classified by the Dutch government as having an "essential occupation" since the COVID-19 pandemic began. We provided the list of essential occupations and sectors published by the Dutch government. Participants could either click on one of the categories of essential occupations that fitted their work situation best (e.g., Healthcare, Teacher, Childcare, Public Transport, Food industry, Emergency and Safety Services), they could click on the option "No, I do not fall in the category essential professions", or they could opt for "I don't know". All participants who indicated "I don't know" were later categorized as non-essential workers.

Professional Identification (PI). Professional identification before and during the COVID-19 pandemic was measured with 6 items with two sub-constructs, namely private and public PI (adapted from Leach et al., 2008; Luhtanen & Crocker, 1992). The instruction text before the COVID-19 pandemic was: "*The following questions are about who you are as a professional. How important was your profession to you before the corona crisis started? Did you feel appreciated for the work that you do? Before the corona crisis started..*". The instruction text during the corona crisis was: "*The corona crisis may have changed a lot in your current work situation. We are curious how you see yourself as a professional now, since the start of the COVID-19 pandemic. Currently...*". This instruction was followed by three professional identification items: 1) (..I was [am] proud of who I am as a professional; 2) ..I was [am] convinced that I make an important contribution with the work that I do as a professional; and 3) ..Who I am as a professional was [is] an important part of my identity; $\alpha_{\text{pre-corona}} = .81$; $\alpha_{\text{during}} = .85$). Additionally, three items measured public professional identification: 1) (..In general, others had [have] respect for what I do as a professional; 2) ..In general, others considered [considered] the work that I do as professional as valuable; and 3) ..In general, others appreciated [appreciate] the work that I do as a professional; $\alpha_{\text{pre-corona}} =$

.92; $\alpha_{\text{during}} = .96$). Items were measured on a 7-point Likert scale (1 = totally disagree; 7 = totally agree).

Results

In Table S1 (Supplementary Materials), descriptive statistics (M , SD) and correlations (r) among variables are displayed.

Work circumstances 1st wave COVID-19: (non-)essential work, work location and hours

In this sample, 38.3% ($N = 142$) participants categorized as "essential worker", relative to a majority of 61.7% ($N = 229$) who categorized as "non-essential worker" or who did not know. These percentages are comparable to the national situation in the Netherlands in which 64% out of 8.9 million in the Dutch working population were categorized as non-essential workers (CBS, 2023). Moreover, also comparable to national and worldwide patterns, women worked significantly more often in an essential occupation (43.1% of women; $N = 112$) compared to men (27.0% of men; $N = 30$), $X^2(1) = 8.482$, $p = .004$.

A mere 0.5% of respondents ($N = 2$) indicated they worked completely from home prior to the COVID-19 pandemic, whereas 71.7% ($N = 266$) indicated they worked completely from home during the 1st lockdown. A repeated measures GLM ANOVA analysis with gender (woman/man) and essential worker (no/yes) as between-subjects factors and having kids at home (no/yes) as covariate, indeed demonstrated a significantly large shift from mostly working on location before COVID-19 ($M = 6.01$; $SE = .07$) to mostly working from home during the first COVID-19 lockdown ($M = 2.04$; $SE = .10$), $F(1, 366) = 424.51$, $p < .001$, $\text{partial } \eta^2 = .54$. This shift was qualified by being categorized as (non-)essential, $F(1, 366) = 20.43$, $p < .001$, $\text{partial } \eta^2 = .05$. Specifically, pre-COVID-19 there were no statistically significant differences in working from home or on location between essential (M

= 6.14; $SE = .12$) and non-essential workers ($M = 5.89$; $SE = .08$; $F(1, 366) = 2.84$, $p = .098$, $partial \eta^2 = .01$). Yet during the 1st lockdown, non-essential workers worked significantly more from home ($M = 1.42$; $SE = .12$) compared to essential workers ($M = 2.67$; $SE = .17$), $F(1, 367) = 35.87$, $p < .001$, $partial \eta^2 = .09$. There was no evidence of gender differences, or differences in whether kids lived at home or not.

The same repeated measures GLM was applied to weekly work hours. On average, the number of hours worked per week in this highly educated sample was higher ($M_{workhours} = 35.59$; see Table 1) relative to the Dutch population (on average 31 hours a week; 35-40 hours a week is considered full-time in the Netherlands (CBS, 2020)). Second, prior to the first COVID-19 lockdown, women in the sample worked significantly fewer hours each week ($M = 33.91$; $SE = .57$) than men ($M = 40.23$; $SE = .96$), $F(1, 367) = 33.23$, $p < .001$, $partial \eta^2 = .08$. Weekly working hours of the highly educated women in this sample were higher relative to the Dutch population (on average, Dutch women work 28.5 hours a week and men 39 hours a week (SCP, 2020)).

As expected, participants indicated working significantly fewer hours each week during the 1st lockdown ($M = 33.23$; $SE = .66$) compared to before March 2020 ($M = 37.07$, $SE = .51$), $F(1, 366) = 37.43$, $p < .001$, $partial \eta^2 = .09$. This drop in almost 4 work hours per week³ was further qualified by being a (non-)essential worker ($F(1, 366) = 5.85$, $p = .016$, $partial \eta^2 = .02$), such that the reduction in hours was steeper among non-essential workers ($M_{difference} = 5.05$; $SE = .68$; $p < .001$; 95%CI: 3.71 - 6.39) compared to essential workers ($M_{difference} = 2.631$; $SE = .91$; $p = .004$; 95%CI: .85 - 4.42). In addition, the decline in work hours during the first lockdown was also associated with having kids at home ($F(1,$

³ The drop in average weekly work hours in this sample is comparable to nationwide numbers from a representative LISS panel study done by the University of Tilburg and IZA institute (Bonn) also showing an average reduction of 4 hour work hours per week among the Dutch population during the first COVID-19 lockdown (Von Gaudecker et al., 2020).

366) = 5.55, $p = .019$, $partial \eta^2 = .02$), such that the decline in work hours was steeper among participants with kids at home ($M_{difference} = 5.27$; $SE = .62$; $p < .001$; 95%CI: 4.06 - 6.48) compared to those without ($M_{difference} = 2.42$; $SE = 1.07$; $p = .024$; 95%CI: .32 - 4.52). There was no evidence of significant gender differences in the reduction of work hours during the first lockdown of COVID-19.

Does categorisation as a (non-)essential worker predict PI during the 1st COVID-19 wave?

To test Hypotheses 1 and 3, a GLM repeated measures analysis was conducted with essential worker (no/yes) and gender (woman/man) as between-subjects factors, private and public PI pre- and during COVID-19 as within-subjects factors, and kids at home as a covariate. First, the level of private PI dropped significantly when comparing the pre-COVID-19 responses ($M = 5.83$, $SE = .06$) with the current 1st lockdown situation ($M = 5.50$, $SE = .07$), ($F(1, 367) = 11.07$, $p = .001$, $partial \eta^2 = .03$). Confirming Hypothesis 1, this decline in PI was steeper among non-essential ($M_{difference} = .47$; $SE = .06$; $p < .001$; 95%CI: .35 - .59) compared to essential workers ($M_{difference} = .19$; $SE = .08$; $p = .018$; 95%CI: .03 - .35), $F(1, 367) = 7.76$, $p = .006$, $partial \eta^2 = .02$; Figure 3, panel A). No evidence was found for gendered effects in relation to PI decline among non-essential versus essential workers.

For public PI, there was no significant main effect between pre- versus 1st lockdown PI levels, $F(1, 367) = .87$, $p = .35$, $partial \eta^2 = .002$. There was, however, a significant interaction between time and essential worker (no/yes), ($F(1, 367) = .19.30$, $p < .001$, $partial \eta^2 = .05$). Only non-essential workers experienced a significant decline in public PI from pre-COVID-19 times ($M = 5.66$; $SE = .06$) compared to during the 1st lockdown ($M = 5.29$; $SE = .08$), $F(1, 367) = 36.88$, $p < .001$, $partial \eta^2 = .09$. For essential workers, the reported

level of public PI was similar across both timepoints, $F(1, 367) = .49, p = .486$, *partial* $\eta^2 = .001$ (See Figure 3; panel B). Again, there was no evidence of gender differences.

Do changed work circumstances explain non-essential workers' lower PI?

To test Hypothesis 2, we relied on Hayes' (2012) PROCESS (Moderated) Mediation model 4 to investigate whether changes in work circumstances (work location and work hour changes) relative to pre-COVID would explain (non-)essential workers' differing PI levels. We investigated whether a *decrease* in work hours and an *increase* in working almost solely from home could explain lower PI levels among non-essential (more than essential) workers during the first COVID-19 lockdown (while controlling for pre-COVID-19 levels). Difference scores were calculated by subtracting pre-COVID work hours and work location measures from the same measures during the 1st lockdown. Within this model, changes in work location and work hours were modelled to mediate the relationship between essential worker (no/yes) and PI during COVID-19, while controlling for pre-COVID-19 levels of PI. Gender⁴ and kids at home were included as covariates in the model.

For Private PI, the total model explained a significant proportion of variance, $R^2 = .442, F(6, 364) = 48.05, p < .001$. There was a significant indirect effect of work location ($indirect_{location} = -.064, SE = .031; 95\%CI [.01, .13]$) such that relative to essential workers, non-essential workers' higher increase in working from home ($\alpha^1 = -1.19, SE = .18; t = -6.76, p < .001$) explained a steeper decrease in their PI during COVID-19 ($b^1 = -.054; SE = .03; t = -2.02, p = .044$). Moreover, there was a significant indirect effect of work hours ($indirect_{hours} = .08, SE = .04; 95\%CI [.011, .191]$), such that relative to essential workers, non-essential workers' stronger decrease in work hours ($\alpha^2 = -2.22, SE = .97; t = -2.29, p = .023$) also

⁴ We also tested whether gender would moderate the relationship between changes in the work situation (i.e., increase in working from home, and reduction in work hours) and professional identification (with PROCESS Model 14, Hayes, 2012) but no such gender effects were found and thus gender was inserted as a covariate.

explained a steeper decline in their PI during COVID-19 ($b^2 = -.038$; $SE = .01$; $t = 7.92$, $p < .001$).

We see similar effects for public PI. For Public PI, the total model explained a significant proportion of variance, $R^2 = .268$, $F(6,364) = 12.245$, $p < .001$. There was a significant indirect effect of work location ($indirect_{location} = -.066$, $SE = .031$; 95%CI [-.142, -.015]), such that relative to essential workers, non-essential workers' stronger increase in working from home ($\alpha^1 = -1.205$, $SE = .18$; $t = -6.886$, $p < .001$) explained their steeper decline in public PI during COVID-19 ($b^1 = -.061$; $SE = .03$; $t = -2.198$, $p = .029$). Moreover, there was a significant indirect effect of work hours ($indirect_{hours} = .079$, $SE = .035$; 95%CI [.013, .161]) such that relative to essential workers, non-essential workers' stronger decrease in work hours ($\alpha^2 = -2.239$, $SE = .966$; $t = -2.319$, $p = .021$) explained a steeper decline in public PI during COVID-19 ($b^2 = -.031$; $SE = .005$; $t = -6.265$, $p < .001$). In contrast to the indirect effect for private PI, however, the direct effect of being an essential worker on public PI remained significant.

Discussion

Study 1 set out to investigate how people's work situation changed during the 1st COVID-19 lockdown in the Netherlands, how this was contingent upon being declared 'essential' or 'non-essential', and what psychological consequences this would have for their PI levels, both privately and publicly. Confirming Hypotheses 1 and 2, results showed that non-essential workers reported working significantly *more* from home and having *reduced* their weekly work hours significantly more during the 1st lockdown than essential workers. In turn, this stronger disconnect from work (both location- and time-wise) among those declared non-essential explained their lower PI during COVID-19. This decline in PI for non-essential

workers reflected declines in both private and public PI. No evidence of gender differences was found (i.e., no evidence supporting H3).

Building on Study 1, the purpose of Study 2 was to investigate whether the effects of being declared (non-)essential on PI would replicate during the 2nd peak wave of COVID-19 infections in the Netherlands, which started approximately in October 2020 and lasted until February 2021. During this phase of the pandemic, the Dutch government initially imposed a partial lockdown on October 14, 2020. Although measures were milder than during the 1st lockdown (e.g., schools and day care remained open until early December), regulations were stricter than during the summer months. Restaurants and cafés were closed, social visits were limited, kids were regularly required to stay at home from school given strict quarantine regulations (i.e., when they or a family member had/were suspected of having COVID), and for non-essential workers, the mandate to work from home went into effect again from November 4th. Despite these partial lockdown measures, COVID-19 infection rates kept rising and the government imposed a full lockdown on December 14, 2020, once again fully closing schools and daycare centers, all non-essential stores, and imposing a curfew (Government of the Netherlands, 2020b, 2020a). These regulations were even stricter than the 1st lockdown in March-May 2020.

The re-introduction of lockdown measures in fall 2020 was met with quite some resistance. And, rather than being applauded, or better financially compensated, healthcare workers increasingly received threats (i.e., via social media) from the public in connection to the restrictive COVID-19 measures (Ministry of Social Affairs, 2021). Also, a strong lobby developed during the summer of 2020 led by employers in certain occupational sectors, pushing to be earmarked as ‘essential’ rather than ‘non-essential’ (for example universities transitioned to being essential), to avoid further productivity and financial losses. Employers in non-essential sectors were also more resistant towards lockdown restrictions during this

second phase, and less lenient towards non-essential workers who were unable to work their usual hours, or who needed to work from home due to care tasks or to avoid health risks for vulnerable family members. Thus, while the distinction between “essential” and “non-essential” workers was still in full force during the 2nd wave of COVID-19 infections, the meaning of these two categories became more ambiguous, and there was more resistance to restrictions imposed on non-essential workers (NOS news, 2020). In light of these events, the first goal of Study 2 was to see if the government’s distinction between essential and non-essential occupations was still a psychologically meaningful social categorization among the Dutch working population. A second goal of Study 2 was to answer the “So what?” question and investigate potential consequences of different PI levels among non-essential and essential workers for perceived work productivity. Specifically, we empirically test whether lower PI among non-essential (compared to essential) workers was associated with lower work productivity during the 2nd peak wave of COVID infections (*Hypothesis 4*).

Study 2

From 4 -14 December 2020, an updated version of the survey “Gender and Work in Times of COVID-19” was once again distributed among Dutch men and women. The same inclusion criteria and sampling method was applied as in Study 1, and people were asked to reflect on their work-family life over the past four weeks. A question about work productivity was added to the survey. Note that at this timepoint, we no longer included a retrospective pre-pandemic measure of professional identification, since retrospective methods on psychological constructs become more unreliable as time passes (Henry et al., 1994).

Method

Participants

In total $N = 1032$ Dutch participants started the survey. Inclusion criteria were that participants provided active informed consent to participate ($N = 831$), self-identified as either a man or a woman ($N = 678$), indicated whether they had an essential profession or not ($N = 471$) and filled out the questions about professional identification ($N = 467$). This resulted in an analytic sample of $N = 467$, with $N = 304$ women (65.1%) and $N = 163$ men (34.9%), with a mean age of $M = 42.60$ ($SD = 11.89$; range 19-66 years). The sample was highly educated (albeit less than Study 1) with $N = 251$ (53.7%) holding a university degree or higher, $N = 136$ (29.1%) holding a degree from an applied university, and $N = 80$ (17.2%) holding a degree in vocational education or lower. All participants were involved in a romantic relationship, on average for $M = 18.25$ years ($SD = 11.28$; range 1-47 years) and $N = 256$ (54.8%) had kids living at home. All participants had paid work for at least 8 hours a week before COVID-19, on average $M = 34.55$ ($SD = 11.40$) hours a week.

Procedure

The procedure for data collection was similar to Study 1, inclusion criteria were the same, and a similar questionnaire, again approved by the Ethics Committee of the Faculty of Social and Behavioral Sciences of Utrecht University (FETC 20-619) was administered. The survey was available in Dutch and online for 2 weeks: from December 4th to December 20th. It took 15-20 minutes to complete the survey. Respondents were not rewarded for their participation. Again, sensitivity analyses on the most comprehensive statistical model in the current study (a 2 gender (between-subjects: man versus woman) by 2 essential worker (between-subjects: essential versus non-essential) by 1 (covariate) model indicated that the study was sufficiently powered to detect small to medium effect sizes (e.g., Cohen's $f^2 \geq 0.08$; $\alpha = 0.05$, $1 - \beta = 0.80$).

Measures

Work Location. Participants were asked how much they were currently working from home versus outside their home with the question: “At the moment, do you mainly work from home or outside your home?” (1 = I work completely from home; 7 = I work completely outside my home). Note that the survey no longer included a retrospective measure on participants’ estimation of how much they worked from home versus outside the home before the COVID-19 crisis.

Work Hours. In an open-ended question, participants were asked about how many hours a week they worked before (i.e., Before the COVID-19 crisis, how many hours a week did you approximately work?) and now (i.e., Approximately how many hours a week are you still able to actually work since the COVID-19 crisis?).

(Non-)Essential Worker. Participants were provided with the updated list of essential occupations or sectors published by the Dutch government and asked to click on one of the categories of essential occupations that fitted their work situation best (e.g., Healthcare, Teacher, Childcare, Public Transport, Food industry, Emergency and Safety Services), or on the option “No, I do not fall in the category essential professions” or on “I don’t know”. Participants who indicated “I don’t know” were later categorized as non-essential worker.

Professional Identification. Professional identification during COVID-19 was measured with the same items as in Study 1, with three items on private PI ($\alpha = .79$) and three items measuring public PI ($\alpha = .93$), on a 7-point Likert scale.

Work productivity. Work productivity was measured with one item: “If you think about the past four weeks, how much of your work do you get done compared to the situation before the COVID-19 crisis? (1 = I get a lot less work done; 2 = I get a little less work done; 3 = I get as much work done; 4 = I get a little more work done; 5 = I get a lot more work done; 7 = there is hardly any work for me to do; 8 = I am completely unable to do my work).

The last two items were recoded as 0 forming a scale from 0 (no/hardly any work to do) to 5 (I get a lot more done).

Results

In Table S2, descriptive statistics (M , SD) and correlations (r) of the model variables are displayed.

Work circumstances 2nd wave COVID-19: (non-)essential work, work location and work hours

In this sample, 45% ($N = 210$) of respondents were categorized as an “essential worker”, relative to a majority of 55% ($N = 257$) who categorized as a “non-essential worker” or who did not know. The higher percentage of essential workers relative to Study 1 may be due to sampling bias but could also potentially reflect the earlier discussed national changes in the labelling of essential occupations, such that more sectors were now categorized as “essential”. As in Study 1, women were much more likely to be an essential worker (51% of women; $N = 155$) than men (33.7% of men; $N = 55$), $X^2(1) = 12.75, p < .001$.

With regards to work location, 31.7% ($N = 148$) of all participants indicated working completely from home in November/December. This percentage was much lower compared to Study 1 in May/June 2020, where 71.7% indicated working completely from home. An ANCOVA with gender (man/woman) and essential worker (no/yes) as between-subjects factors and kids at home (no/yes) as covariate, demonstrated that non-essential workers still worked significantly more from home ($M = 2.83; SE = .14$) compared to essential workers, who worked more on location ($M = 4.22; SE = .18$), $F(1, 462) = 37.11, p < .001, partial \eta^2 = .074$. In contrast to Study 1, this effect was now qualified by gender, $F(1, 462) = 6.08, p = .014, partial \eta^2 = .013$, such that women in non-essential occupations indicated working primarily from home ($M = 2.56; SE = .19$) while women in essential professions indicated

working primarily on location ($M = 4.50$; $SE = .18$), $F(1, 462) = 56.43$, $p < .001$, $partial \eta^2 = .109$. Men classified as non-essential workers also worked more from home ($M = 3.11$; $SE = .22$) relative to men essential workers ($M = 3.93$; $SE = .30$), but this difference was less pronounced, $F(1, 462) = 4.85$, $p = .028$, $partial \eta^2 = .010$.

With regards to work hours, results from a Repeated Measures ANCOVA showed that the average number of work hours per week ($M_{hours} = 35.38$; $SE = .48$) was higher in this sample compared to the Dutch population (who work on average 31 hours a week), again likely caused by the highly educated convenience sample. Women's average weekly work hours were lower ($M = 31.44$; $SE = .55$) compared to men's ($M = 39.31$; $SE = .80$), $F(1, 460) = 65.74$, $p < .001$, $partial \eta^2 = .125$. Yet women's work hours in this sample were higher compared to the population (28.5 hours a week on average). For men, work hours were comparable to the population (39 hours a week on average; (SCP, 2020)). In contrast to the outcomes in Study 1, pre-pandemic reported work hours were no longer significantly different from current work hours (in November/December 2020). Also contrasting the May/June situation, there were no significant differences in reported (changes in) work hours for those in non-essential versus essential occupations during the 2nd COVID-19 peak. In other words, work hours seemed to have bounced back to pre-pandemic times. No interaction with gender was found either (all p 's $\geq .09$; all $partial \eta^2 \leq .006$).

Does categorisation as a (non-)essential worker (still) affect PI during the 2nd COVID-19 wave?

Two ANCOVA's were conducted with essential worker (no/yes) and gender (men/women) as between-subjects factors, kids at home as covariate and private and public PI as DV's. Confirming Hypothesis 1, private PI was again significantly lower among non-essential compared to essential workers, $F(1, 462) = 8.84$, $p = .003$, $partial \eta^2 = .019$.

What's more, in contrast to Study 1, and in concordance with Hypothesis 3, the main effect

of essential worker was further qualified by gender, $F(1, 462) = 6.15, p = .013, \text{partial } \eta^2 = .013$ (See Figure 4). Women were more strongly affected in their PI depending on whether they were categorized as a (non-)essential occupation. Women in non-essential professions scored lowest on private PI ($M = 4.99; SE = .10$), whereas women in essential professions scored highest on private PI ($M = 5.65; SE = .10$), $F(1, 462) = 22.92, p < .001, \text{partial } \eta^2 = .047$. For men, levels of private PI were not significantly different between non-essential ($M = 5.31; SE = .12$) and essential workers ($M = 5.37; SE = .16$), $F(1, 462) = .089, p = .766, \text{partial } \eta^2 = .000$. Note that in general, private PI levels reported here were lower compared to the Study 1 sample in May/June 2020, with the exception of women in essential occupations.

In contrast to Study 1, no evidence was found that public PI was higher among essential compared to non-essential workers in November/December 2020, $F(1, 461) = .50, p = .481, \text{partial } \eta^2 = .001$. On average, participants reported their level of public PI to be $M = 5.21 (SE = .06)$, which is comparable to what non-essential workers reported in Study 1 in May/June 2020. No significant gender differences were found in public PI.

Do changed work circumstances during 2nd wave COVID-19 (still) explain non-essential workers' lower private PI?

In contrast to Study 1, this sample from the 2nd COVID-19 wave showed that people's work hours had largely bounced back to the 'normal' situation pre-pandemic and no differences were observed in work hours between essential and non-essential workers. Moreover, given that we only established significant effects of classification as a (non-)essential worker and gender on private, not public PI, we tested Hypothesis 2 with a moderated mediation model including essential worker (no/yes) as IV, work location as the mediator, private PI as the DV, and gender (men vs women) as the moderator (Model 7;

Hayes, 2012). Covariates were kids at home (no/yes), and current work hours (during the 2nd wave of COVID-19).

The total model explained a small yet significant proportion of variance in PI, $R^2 = .061$, $F(4,460) = 7.520$, $p < .001$. As evident from prior analyses, non-essential workers worked more from home (rather than on location) than essential workers ($\alpha = 0.81$, $SE = 0.37$, $p = .032$, $CI_{95\%} = 0.072; 1.543$), and women worked more from home than men ($\alpha = -.59$, $SE = .30$, $p = .05$, $CI_{95\%} = -1.178; -0.010$). A significant interaction between essential worker and gender ($\alpha x = 1.087$, $SE = 0.46$, $p = .018$, $CI_{95\%} = 0.191; 1.982$) showed that while both women ($\alpha x_{\text{women}} = 1.894$, $SE = 0.26$, $p < .001$, $CI_{95\%} = 1.377; 2.411$) and men ($\alpha x_{\text{men}} = 0.807$, $SE = 0.37$, $p = .032$, $CI_{95\%} = 0.072; 1.543$) worked more from home when in a non-essential compared to an essential occupation, this effect was more than two times larger for women than for men. Contrasting Study 1, no (conditional) indirect effects were observed on (non-)essential workers' PI levels via work location (i.e., all confidence intervals contained zero). Work location was no longer related to PI levels during the 2nd COVID-19 wave ($b = 0.02$, $SE = 0.02$, $p = .35$, $CI_{95\%} = -0.024; .070$), lending no support for H2. Only the direct effect of essential occupation (non-essential versus essential) on PI remained ($c' = 0.49$, $SE = 0.12$, $p < .001$, $CI_{95\%} = 0.253; .723$).

Is lower PI among non-essential workers associated with lower work productivity?

As a final step, we tested whether different PI levels among non-essential compared to essential workers would have consequences for perceived work productivity during the COVID-19 pandemic. In a moderated mediation model (PROCESS model 7; Hayes, 2012), we investigated whether the lower PI reported by non-essential workers during the 2nd wave of COVID-19 would be associated with lower work productivity, above and beyond potential effects of work circumstances (work location and work hours). Gender was included as a

moderator and kids from home was inserted as covariate (See Figure 6). There was a significant conditional indirect effect of essential worker on work productivity via PI, *only* for women ($conditional\ indirect_{women} = .16, SE = .04; 95\%CI [.081, .247]$) but *not* for men ($conditional\ indirect_{men} = .014, SE = .05; 95\%CI [-.081, .116]$). Women 's lower PI when in a non-essential (compared to essential) occupation ($\alpha_{women}^I = .65, SE = .14; t = 4.73, p < .001$) predicted lower reported work productivity during the 2nd COVID-19 wave ($b^I = .24; SE = .04; t = 5.84, p < .001$).

Discussion

Study 2 showed that in November/December 2020, those categorized as non-essential workers still reported lower private PI compared to those categorized as essential workers (supporting Hypothesis 1). There was no empirical evidence that public PI levels were different between essential versus non-essential workers. This could reflect the earlier described reduced appreciation for essential workers over the course of 2020, as they were increasingly receiving threats in connection to the restrictive COVID-19 measures. Additionally, the Dutch government rescinded initial plans to provide better financial compensation for healthcare workers in the summer of 2020. These factors could have contributed to essential workers feeling less meaningful and/or appreciated by society during the 2nd COVID-19 wave.

Further contrasting Study 1, non-essential workers' lower PI was no longer explained by different work circumstances (i.e., working more from home, and working less hours a week; Hypothesis 2). Instead, during the 2nd wave of COVID-19, gender differences began to appear in how men and women were affected by being labeled (non-)essential workers (Hypothesis 3). Specifically, lower private PI levels among non-essential versus essential workers were especially pronounced among women. In fact, private PI levels were lowest among women in non-essential occupations, significantly lower than private PI levels of men

in non-essential occupations. Also, the contrast between working primarily from home as a non-essential worker versus primarily on location as an essential worker, was more pronounced among women than men. This finding suggests that men returned to working more on location irrespective of being categorized as (non-)essential.

In the final Study 3, our aim was to further validate and replicate findings from Study 1 and 2, this time with a representative national probability-based sample drawn from population registers, also conducted during the 2nd wave of COVID-19 infections in 2020 using the LISS panel. In addition to work productivity as an outcome variable, we also added a work performance measure already available in the LISS panel survey, which focused on *contextual work performance*. Contextual performance can be defined as work-related behavior that supports the organization and the social-psychological work environment as a whole (Borman & Motowidlo, 1993; Koopmans et al., 2011). Contextual work performance entails things that go beyond formally prescribed work goals, such as taking on extra tasks, showing initiative, showing leadership, effective communication, and coaching newcomers on the job. It is related to concepts such as extra-role behavior and organizational citizenship behavior and forms an intangible yet crucial human capital asset to keep organizations afloat and flexible, especially during times of change or disruption (Rotundo & Sackett, 2002). During the COVID-19 pandemic, organizations likely had to rely heavily on employees' contextual work performance to flexibly respond to changing work demands and circumstances. In line with research evidence showing a positive relation between professional identification levels and organization-level outcome variables, such as organizational commitment and citizenship behavior (Greco et al., 2022), we expected that non-essential (vs. essential) workers' lower PI levels would negatively correlate with engagement in extra tasks and role performances at work during the 2nd wave of the COVID-19 pandemic.

Study 3

Study 3 is based on part of the COVID Gender Inequality Survey Netherlands (CoGIS-NL) study and was conducted in November 2020 within the Longitudinal Internet studies of the Social Sciences (LISS) panel. The LISS panel is a representative, online survey panel based on a true probability sample drawn by the Dutch National Statistics Office (CBS) from Dutch population registers. There is no self-selection into the sample and households without internet access are provided with the necessary broadband connection and computer if necessary. Refreshment samples are drawn periodically to ensure continued representativeness of the panel. The LISS panel consists of approximately 7,500 individuals (5,000 households). Questionnaires are administered by CentERdata, located at Tilburg University, the Netherlands, using the LISS panel. We were invited by the CoGIS-NL team to join the project by adding items on (non-) essential work and professional identification to their longitudinal study on gender differences in work, care, and wellbeing for the fourth wave of data collection in their research program. Given time constraints within the existing survey, we could only add a limited number of items. We therefore focused on private (not public) professional identification, also because public PI was no longer affected by the label (non-)essential in November/December 2020.

Method

Participants

The survey was presented to $N = 1,456$ LISS panelists and $N = 1,097$ individuals (partially) filled out the questionnaire. completed the survey in full (75,3% response rate). General inclusion criteria at the start of the CoGIS-NL research project (April 2020) were that participants had to be a LISS panel member in a household with at least one member in paid employment and at least one child under the age of 18 living at home. The panel was

supplemented with participants without co-resident minor children from July 2020. The current data therefore included both participants with and without co-resident minor children. Specific inclusion criteria for this study were that participants were employed ($N = 991$), indicated whether they had an essential occupation or not ($N = 989$), and were in a romantic relationship ($N = 823$). This resulted in a final sample of $N = 735$, with $N = 397$ women (54%) and $N = 338$ men (46%), with a mean age of $M = 43.24$ ($SD = 7.97$; range 25-61 years). The CoGIS-NL November 2020 sample was representative of the Dutch population in terms of education level, with $N = 368$ (50%) holding a degree from a scientific (WO; $N = 132$; 17.9 %) or applied university (HBO; $N = 236$; 32.1%), $N = 238$ (32.4%) holding a degree in vocational education (MBO), $N = 48$ (6.5%) having completed advanced secondary school (HAVO/ VWO), and $N = 70$ (9.5%) having completed vocational secondary school (VMBO), and $N = 10$ (1.3%) having completed primary school. $N = 503$ (68.4%) had kids currently living at home. Participants weekly work hours before COVID-19 were on average $M = 29.48$ ($SD = 15.32$) a week. Most participants ($N = 659$; 89.6%) indicated they generated their financial income through paid employment, $N = 69$ (9.3%) indicated they were self-employed, and $N = 16$ (2.1%) indicated working in a family business.

Procedure

Data were collected via an online survey called “Corona and your home situation”, administered in the LISS panel. The survey contained items measuring respondents’ experiences relating to their paid work, division of childcare and household tasks and wellbeing. The survey took approximately 7 minutes, was available in Dutch and was online from November 4 – November 24, 2020. Comparable to Study 2, at the time of data collection, the Netherlands was in a partial lockdown in response to the 2nd wave of infections in 2020.

Measures

Participants were asked to think about their life in the past weeks [in November] during the COVID-19 pandemic and answer questions about their work and family situation.

Work Location. Participants were asked “What is your work situation at this moment?”. Five answer options were offered moving from working almost completely from home (due to COVID-19 restrictions), to working completely on location, because the work could not be done from home (1 = “Before the COVID-19 crisis I worked (nearly) always from home and at this moment as well”; 2 = “Due to the Corona crisis I now work almost all my work hours from home; 3 = “Due to the corona crisis I partially work from home, and partially at my normal work location; 4 = “I work almost all my hours at my normal work location, but I have the possibility to work from home; 5 = “I work at my normal work location, outside my home, because I cannot do my job from home”. Two additional answer options (6 = “I am at home, but due to the Corona crisis I currently have no work to do”; 7 = Not applicable) were indicated as missing; resulting in 716 responses to this question.

The design of answer categories on this question in the LISS panel study was intended for descriptive purposes and beyond our control. While theoretically we could infer that higher scores would indicate working more on location (versus lower scores indicating more working from home) and thus that essential workers would score higher on this 5-point scale compared to non-essential workers, a problem is that scale interpretation is double-barreled; going from working from home as a natural situation, a forced situation due to COVID-19, to working partially from home (flexibly), to working on location fully as a forced situation due to COVID-19. Such scaling is suboptimal as we assume a continuous character of dependent variables in regression-based inferential statistics, which we apply to investigate group differences in (non-)essential workers’ work situations due to the COVID-19 pandemic. Therefore, in our analyses we will treat this variable both as categorical (Frequencies, chi-square tests) as well as continuous (Means, SD’s and AN(C)OVA’s).

Work Hours. Participants were asked: “On average, how many hours more or less per week do you currently spend on the following activities compared to the situation before the corona crisis?”. Amongst other items, “paid work” was listed. The item was answered on a sliding scale from “-40 hours per week less” to “+40 hours per week more” with a mid-point of zero.

(Non-)Essential worker. Participants were asked if they currently work in what the Dutch Government had classified as an essential occupation. A list of essential occupations was provided. Participants could answer “yes” or “no”.

Professional Identification. Private PI during the COVID-19 pandemic was again measured on a 3-item scale (Leach et al., 2008; Luhtanen & Crocker, 1992). The instruction text read “*The corona crisis and all the government corona measures may have changed a lot in your work situation. How do you currently view yourself as a professional?*” This was followed by “*In November ...*” and the three items e.g., “*I was proud of who I am as a professional*”, “*I was convinced that I make an important contribution with the work I do as a professional*”, and “*...who I was as a professional is an important part of my identity*”. Items were measured on a 7-point scale (1 = totally disagree; 7 = totally agree; $\alpha = .94$).

Work productivity and contextual work performance. *Work productivity* was measured with one item: “How much of your work do you get done compared to the situation before the corona crisis? (1 = I get a lot less work done; 2 = I get a little less work done; 3 = I get as much work done; 4 = I get a little more work done; 5 = I get a lot more work done; 6 = there is no more work to do for me; 7 = I am completely unable to do my work); 8 = not applicable. The last three answer options were recoded as missing.

Contextual work performance was measured with 6 items (Koopmans et al., 2011) namely, *In November “I took on extra responsibility at work”, “I took the initiative to start extra work tasks”, “I took on challenging tasks when these were present”, I came up with*

creative solutions for new problems”, “*I actively looked for new challenges at work*”, “*I actively participated in work meetings*” on a 5-point Likert scale (1 =not at all; 5 = strongly so, $\alpha = .85$).

Results

Descriptive statistics (M , SD) and correlations (r) are displayed in Table 3. Our analytical approach was similar to Study 2.

Work circumstances 2nd wave COVID-19: (non-)essential work, work location and hours

In the LISS sample, 47.2% ($N = 374$) of participants was categorized as essential worker, relative to a small majority of 52.8% ($N = 388$) who indicated to belong to the category "non-essential worker". These percentages are comparable to Study 2. As in Study 1 and 2, the odds for women to be classified as an essential worker were significantly higher (57.4% of women; $N = 228$) than men's (35.2% of men; $N = 119$), $X^2(1) = 36.18, p < .001$.

Of all participants, 24.0% ($N = 172$) indicated working almost completely from home due to COVID-19 measures and 12.2% ($N = 87$) indicated working partially from home due to COVID-19 measures. Moreover, 45% ($N = 323$) of participants indicated working on location because the work could not be done from home. Frequency analyses showed that essential workers were almost twice as likely to work on location because the work could not be done from home (61.0% of essential workers) compared to non-essential workers (30.7% of non-essential workers). By contrast, non-essential workers were three times more likely to work from home due to COVID-19 restrictions (35.7%) compared to essential workers (11.1% of essential workers), $X^2(4) = 93.94, p < .001$. Although measured differently, these results are comparable to Study 2.

Congruent with the frequency analyses above, an ANCOVA with gender (man/woman) and essential worker (no/yes) as between-subjects factors and kids at home (no/yes) as covariate showed that non-essential workers reported working significantly more from home (i.e., lower tendency to work on location; $M = 3.15$; $SE = .07$) relative to essential workers ($M = 4.104$; $SE = .075$), $F(1, 714) = 86.53$, $p < .001$, $partial \eta^2 = .108^5$. These findings replicate both Study 1 and 2. Similar to Study 2, this effect was again qualified by gender: $F(1, 714) = .9.203$, $p = .003$ $partial \eta^2 = .013$. Specifically, women in non-essential occupations indicated working significantly less on location (vs more from home; $M = 2.97$; $SE = .11$) compared to men ($M = 3.33$; $SE = .088$), $F(1, 714) = 6.43$, $p = .011$, $partial \eta^2 = .009$. The opposite pattern (though not significant at $p < .05$) was observed among essential workers, where women reported a slightly higher tendency to work on location ($M = 4.237$; $SE = .093$) compared to men ($M = 3.970$; $SE = .118$), $F(1, 714) = 3.177$, $p = .075$, $partial \eta^2 = .004$.

With regards to work hour changes, an ANCOVA with gender (man/woman) and essential worker (no/yes) as between-subjects factors, and kids at home (no/yes) as covariate showed no main effects, only an interaction effect between essential worker and gender: $F(1, 728) = 15.01$, $p < .001$ $partial \eta^2 = .020$. Specifically, when in an essential occupation, women indicated working about 3 hours and 20 minutes *more* relative to pre-COVID-19 ($M = 3.39$; $SE = .55$), while men reported working about 1 hour more ($M = 1.08$; $SE = .71$), $F(1, 714) = 6.574$, $p = .011$, $partial \eta^2 = .009$. By contrast, in non-essential occupations, women reported working about the same number of hours as before ($M = 0.20$; $SE = .644$), while men reported working on average 2 hours and 40 minutes more compared to pre-COVID-19, $F(1, 714) = 8.613$, $p = .003$, $partial \eta^2 = .012$. Put differently, while for men the

⁵ Note that higher scores indicate a higher tendency to work on location, while lower scores indicate a higher tendency to work from home.

categorisation as “essential” or “non-essential” no longer resulted in significant work hour changes relative to the pre-COVID-19 situation ($F(1, 714) = 3.10, p = .079, \text{partial } \eta^2 = .004$), for women this categorisation continued to matter for work hour changes ($F(1, 714) = 14.07, p < .001, \text{partial } \eta^2 = .019$).

Does categorisation as a (non-)essential worker (still) affect PI during the 2nd COVID-19 wave?

As in Study 2, an ANCOVA with essential worker (no/yes) and gender (men/woman) as between-subjects factors, kids as home as covariate and private PI as a DV was conducted. Corroborating Hypothesis 1 and replicating Study 1 and 2, non-essential workers reported significantly lower levels of professional identification during the second COVID-19 wave ($M = 5.29, SE = 0.07$) compared to essential workers ($M = 5.59, SE = 0.08$), $F(1, 714) = 8.54, p = .004, \text{partial } \eta^2 = .012$. Although the interaction between gender x essential occupation was not statistically significant ($F(1, 714) = 1.65, p = .200, \text{partial } \eta^2 = .002$), univariate effects showed a similar data pattern to Study 2, such that women in non-essential occupations scored significantly lower on private PI ($M = 5.23, SE = .11$) compared to women in essential occupations ($M = 5.66, SE = .09$), $F(1, 714) = 8.60, p = .003, \text{partial } \eta^2 = .012$. For men, PI was not significantly different between non-essential ($M = 5.35, SE = .09$) and essential workers ($M = 5.52, SE = .12$), $F(1, 714) = 1.33, p = .249, \text{partial } \eta^2 = .002$ (see Figure 5).

Do changed work circumstances during the 2nd wave COVID-19 explain non-essential workers' lower PI?

A parallel moderated mediation analysis was conducted to test whether changes in work location and work hours of non-essential (versus essential) workers could (partially) explain lower PI during the second COVID-19 wave. Since changes in (non-) essential workers'

work circumstances and private PI were, at least in part, contingent upon gender, we included gender as a moderator (Model 7; Hayes, 2012). Kids at home (no/yes) was included as covariate.

The total model explained a non-significant proportion of variance in PI, $R^2 = .01$, $F(4,694) = 1.90$, $p = .11$. Most importantly, and similar to Study 2, no (conditional) indirect effects were observed on (non-)essential workers' PI levels via work location and work hour changes (all confidence intervals contained zero), therefore once again failing to provide support for H2. Work location ($b^1 = .001$, $SE = 0.04$, $p = .988$, $CI_{95\%} = -0.073; .074$) and work hour changes ($b^2 = .002$, $SE = 0.01$, $p = .789$, $CI_{95\%} = -.011; .0146$) were not significantly related to PI levels during the 2nd COVID-19 wave, nor were conditional indirect effects for women and men significant. As in Study 1 and 2, the direct effect of essential worker (no/yes) on PI remained significant ($c' = 0.26$, $SE = 0.11$, $p = .012$, $CI_{95\%} = 0.058; .474$).

Is lower PI among non-essential workers associated with lower work productivity and performance?

To test hypothesis 4, we tested whether non-essential workers' lower PI would affect their work productivity and performance. While the earlier reported interaction effect of essential worker x gender on PI was non-significant, the effects of being labelled a (non-)essential worker on private PI levels during the second COVID-19 wave were shown to be more pronounced for women compared to men. Therefore, gender was still included as a moderator to inspect conditional indirect effects in relation to work outcomes. In two moderated mediation models (PROCESS model 7; Hayes, 2013), we investigated whether non-essential (versus essential workers) lower (higher) PI during the second COVID-19 wave was associated with lower (higher) perceived work productivity and performance (beyond

effects that changed work circumstances might have had on work outcomes). Control variable was having kids at home; (see Figure 7).

Work productivity. The model explained a small proportion of variance in reported changes in work productivity now relative to before the COVID-19 pandemic, $R^2 = .015$, $F(5, 670) = , p = .067$. As in Study 2, there was a significant conditional indirect effect of essential worker on work productivity via PI, again *only* for women (*conditional indirect*_{women} = .018, $SE = .01$; 95%CI [.001, .044]) but *not* for men (*conditional indirect*_{men} = .007, $SE = .01$; 95%CI [-.007, .029]). Women 's lower PI when in a non-essential (compared to essential) occupation ($\alpha x_{\text{women}}^1 = .37$, $SE = .15$; $t = 2.530$, $p = .012$) resulted in lower reported work productivity during COVID-19 relative to before ($b^1 = .04$; $SE = .02$; $t = 2.06$, $p = .040$). No indirect effects were observed on work productivity via changes in work location and work hours.

Contextual work performance. The model explained a significant proportion of variance in contextual work performance during the second COVID-19 wave, $R^2 = .119$, $F(5,679) = 18.123$, $p < .001$. There was a significant conditional indirect effect of essential worker on work productivity via PI, again *only* for women (*conditional indirect*_{women} = .066, $SE = .03$; 95%CI [.019, .118]) but *not* for men (*conditional indirect*_{men} = .023, $SE = .02$; 95%CI [-.028, .077]). Women 's lower PI when in a non-essential (compared to essential) occupation ($\alpha x_{\text{women}}^1 = .40$, $SE = .15$; $t = 2.726$, $p = .007$) predicted lower contextual work performance during the second COVID-19 wave ($b^1 = .16$; $SE = .02$; $t = 9.00$, $p < .001$). During the second COVID-19 wave, there was also a somewhat puzzling significant indirect effect via work location, for both women (*conditional indirect*_{women} = -.065, $SE = .02$; 95%CI [-.114, -.018]) and men (*conditional indirect*_{men} = -.034, $SE = .02$; 95%CI [-.067, -.009]), such that the more essential workers indicated to work on location relative to from home, the *lower* levels of contextual work performance, $b^2 = -.05$; $SE = .02$; $t = -2.78$, $p = .005$.

Discussion Study 3

Study 3 results replicated Study 2, this time with a probability-based sample of men and women from Dutch households in the Netherlands collected via the LISS panel. Specifically, Study 3 results showed that (1) categorization of occupations as essential versus non-essential continued to result in lower private PI levels for those declared non-essential compared to essential workers during the second wave of COVID-19 (Hypothesis 1); (2) no evidence was found that non-essential workers' lower PI was explained by changed work circumstances (i.e., work hours and location) during this second wave (Hypothesis 2); and (3) there were gender differences in how men and women were affected by being labeled as (non-)essential workers, such that lower PI levels among non-essential versus essential workers were especially pronounced among women (Hypothesis 3). The gendered effects of non-essential workers' lower PI levels also translated to lower reported work productivity and contextual work performance among women when working in a non-essential occupation, compared to an essential occupation (Hypothesis 4). No such indirect effects were found for men.

As in Study 2, in Study 3 data we once again observed gender differences in how men and women in non-essential occupations responded to the Dutch government's call to work from home as much as possible. Women in non-essential professions were significantly more likely to adhere to the work-from-home advice compared to men in non-essential occupations. Men returned to working more on location, irrespective of being categorized as (non-)essential. Thus, both data from Studies 2 and 3 suggest that during the 2nd peak wave of COVID-19 infections, men in non-essential professions were less likely than women to adhere to government-communicated mandates to work from home. On a psychological level too, men seemed less affected by the categorization "non-essential" or "essential" in their PI levels, and in fact, indicated working *more* hours during the 2nd wave of COVID-19 relative

to before the COVID-19 pandemic. This finding could reflect a desire among men to compensate for lost work time. By contrast, women in non-essential occupations reported significantly lower PI levels; both compared to men and compared to women in essential occupations.

On a final note, the puzzling finding that essential workers' higher inclination to work on location rather than from home negatively predicted lower contextual work performance could be due to fact that the highest score on the scale of this variable was: 5 = "I work at my normal work location, outside my home, because I cannot do my job from home". The lack of opportunity to flexibly arrange work time on and off location, compared with the high workload essential workers dealt with during peak waves of COVID-19, could have depleted essential workers energy, leaving little time for them to engage in *extra* role behaviors as measured with the contextual work performance scale.

General discussion

This research responds to calls to examine the impact of crises such as the COVID-19 pandemic and subsequent governmental response strategies that change the status and meaning of employment and work (Kramer & Kramer, 2020; Stephens et al., 2020). With this research, we provide insight into the socio-psychological impact of governments' classification of occupations as 'non-essential' versus 'essential' during the COVID-19 pandemic on people's professional identification. We tested whether the expected lower professional identification levels among non-essential compared to essential workers during COVID-19 (*H1*) could be rooted in changed work circumstances (*H2*), whether these effects might be gendered (*H3*), and what its downstream consequences could be for work productivity and performance (*H4*).

Categorization as non-essential worker and professional identity

Taking a social identity approach (Tajfel & Turner, 1979; Turner et al., 1987), we theorized that the label “non-essential” worker can be understood as a devaluation of occupational groups and would therefore act as a professional identity threat. As such, our focal hypothesis was that workers categorized as non-essential (compared to essential) would experience lower levels of professional identification during the COVID-19 pandemic. Across three samples collected during two peak waves of COVID-19 infections in April/May and November/December 2020, results consistently showed that non-essential workers’ professional identification decreased relative to before COVID-19 (Study 1) and was significantly lower compared to essential workers during COVID-19 (Studies 1; 2 ;3). With these findings, we extend the applicability of social identity theory to understand how the COVID-19 pandemic changed the way we look at ourselves and our (professional) contribution to society (Jetten et al., 2020).

We further considered how changed work circumstances, namely increased working from home and reduced ability to spend time on paid work during COVID-19, could explain why it would be more difficult for non-essential compared to essential workers to maintain a positive sense of professional identity. Study 1 data (April/May 2020) showed support for this idea: workers in non-essential occupations reduced their work hours more than essential workers and were obligated to work primarily from home, which partially explained their lower PI levels. This finding underscores the importance of the social validation of professional identities, in the sense that people need social interaction and affirmation from their colleagues to positively enact and re-affirm their professional identity (Smith et al., 2013a). Study 1 findings therefore corroborate research conducted early on in the pandemic, demonstrating that a sudden inability to spend time working and the need to work from home, in physical isolation from fellow colleagues, was associated with non-essential workers tendency to detach from their work during the 1st COVID-19 lockdown (Ouwkerk &

Bartels, 2022; Palumbo, 2020; van Zoonen et al., 2022). We extend these initial findings by showing how changed work circumstances predicted lower professional identification among non-essential, but not essential workers during the 1st COVID-19 lockdown.

However, even though by the 2nd peak wave of COVID-19 (Study 2 and 3), non-essential workers continued to experience lower PI compared to essential workers, this was no longer related to changed work circumstances. Work hours had largely returned back to normal (compared to pre-pandemic) for both essential and non-essential workers and were now unrelated to non-essential (relative to essential) workers' lower PI levels. Participants also returned to their work locations more - a lower percentage worked completely from home (according to our data around 30% during the 2nd wave of COVID-19 compared to 70% during the 1st wave). And even though non-essential workers still worked more from home than essential workers did, this was also no longer related to their PI levels.

This latter finding is in line with a growing body of research showing how remote / hybrid working became “the new normal” over the course of the COVID-19 pandemic (McPhail et al., 2023; Oude Hengel et al., 2022). If time spent at the work location is well-balanced with time worked from home, hybrid working can actually foster work productivity, work well-being and work-life balance (Charalampous et al., 2022). Arguably, during the 1st COVID-19 lockdown, working largely from home was experienced as a restrictive government-imposed measure. Yet as the pandemic continued, people may have internalized this new work situation, experienced the benefits from it, and adopted it as a flexible (rather than enforced) choice. This may explain why, in our data, we find that working from home during the 2nd peak wave was longer related to professional identification.

What is important to take away from these research results, is that even though work circumstances changed or bounced back into a new normal over the course of the COVID-19 pandemic, the psychological effect of being labeled ‘non-essential worker’ on professional

identification levels remained: Irrespective of how much (working time) and where (home-bound or on location) people worked, the direct negative effect of social categorization as non-essential (as compared to essential worker) on professional identification was consistently found across all three studies. This demonstrates how deeply-rooted social categorization effects in “us” and “them” are, and how social comparisons that communicate one group (i.e., non-essential) to be of devalued status relative to the other (i.e., essential), imposes a threat to a positive sense of identity with regards to one’s professional group membership (D. Scheepers & Ellemers, 2005b; Turner et al., 1987).

Gendered effects of categorization as non-essential worker

Since the onset of the COVID-19 pandemic, scholars in the socio-economic sciences have been concerned with the gendered effects of the pandemic on relative divisions of paid and unpaid labor, and the volatility of women’s economic position in particular. Empirical findings have been mixed, with evidence of increased gender inequality in most countries and decreased gender equality in some (André et al., 2021a, 2023; Del Boca et al., 2020; Meekes et al., 2023; Yerkes et al., 2022). Our research contributes to a further clarification of this complex picture. Novel here is our focus on identity-concerns, and the (lack of) self-worth and self-esteem that working men and women were able to derive from their professional identity during COVID-19. During the 1st peak wave (Study 1), no gender effects were observed in PI levels depending on being categorized as essential or non-essential worker, nor did men and women respond differently with regards to how their work circumstances changed during the COVID-19 pandemic during the first lockdown. Men and women in non-essential occupations experienced similar significant reductions in their work hours and work location, working significantly more from home. Indeed, the sudden shock experienced by most at the start of the COVID-pandemic corresponded with a general willingness to adhere to government-imposed restrictions, to engage in social distancing and to override normal

routines of work and care responsibilities in the Netherlands. Thus temporal shifts took place in traditional paid work and unpaid care responsibilities between the genders during the first lockdown, with men taking on more care tasks and women more paid work, largely because men were more often categorized as non-essential workers while women were more often categorized as essential workers (André et al., 2021b; Yerkes et al., 2020). Yet these shifts towards less traditional gender role divisions largely bounced back by November 2020 (André et al., 2023; M. Yerkes et al., 2022).

Corresponding to this shift back towards more traditional gendered role divisions, our data from the 2nd peak wave of COVID-19 in November/December 2020 (Study 2 and 3) showed that women were more inclined to follow up on work-from-home advice when in a non-essential occupation than men, and that women in non-essential occupations reported lowest levels of professional identification while men reported higher levels of professional identification, irrespective of being classified as (non-)essential worker. A potential reason for these gender differences in how men and women responded to being classified “non-essential worker” during later stages of the COVID-19 pandemic could be because there was more ambiguity and with regards to the adherence to restrictive rules for those in non-essential occupations (i.e., use of emergency day-care facilities varied strongly per institution, companies in non-essential sectors started to request employees to return to work) and people’s willingness to adhere to COVID-19 lockdown restrictions drastically declined (Onderzoeksraad, 2023), as the socio-economic ramifications of lockdown restrictions became more and more apparent (e.g., social isolation, job loss, economic loss). Amidst situational ambiguity, when clarity on rules and information is otherwise lacking, gender stereotypes and biases tend to creep in and “fill in the cognitive blanks” (Heilman et al., 2019; Heilman & Haynes, 2007). Higher ambiguity and resistance towards the lockdown label ‘non-essential worker’ may have caused women in non-essential occupations to feel pushed

back into their traditional gender roles as “homemaker”, evident from our data showing that they were working more from home and feeling more detached from their professional identity during the 2nd COVID-19 wave. By contrast, amidst this ambiguity men in non-essential occupations may have taken the liberty to go back to the office and make their professional lives more central again, shielded (or perhaps pushed) by their male “breadwinner” role.

Practical implications

This research shows that government-imposed sanctions that classify an entire working population into two groups of “essential” and “non-essential” workers during a global health crisis have far-reaching consequences with regards to how meaningful and worthwhile people feel in their work. When governments communicate a societal divide among two groups of workers deemed ‘essential’ versus ‘non-essential’ to keep society functioning in response to an immediate health crisis, this categorization forms an identity threat to non-essential workers’ professional self-worth in the short-run, and in the long run too, be it particularly for women. By extension, this lower PI impedes non-essential workers’ work productivity and performance. Governments should consider how they frame differences between jobs when announcing lockdowns, to avoid unintended negative effects on greater-good motivations. For example, they could emphasize that so-called “non-essential” jobs are vital for economic recovery following a lockdown. Alternatively, governments could avoid using communications with a denying or dismissive connotation in relation to lockdown behaviors expected from non-essential workers (i.e. *no* access to schooling, *close* the business, *do not* travel), and instead communicate appreciation and opportunity for actionable responses, such as extra (paid) volunteer work, care responsibilities, and community-building and health-promoting activities that lie within the scope of opportunity for non-essential workers to support society during a health crisis (GCS Behavioral Science Team, 2022).

In line with this, our research further underscores the need to give consideration to the socio-psychological implications of pandemic management. An evaluation report from the Dutch Safety Board, assessing the government response to the pandemic at each stage, concludes that there was too much focus on short-term problems (e.g., ICU beds and capacity, infection rates) with insufficient attention for latent issues developing on a societal and psychological level (e.g., societal unrest, trust in government, social isolation, depression, burnout, job loss, economic losses). To improve preparedness for future pandemics, the government needs to give consideration to such socio-psychological effects (e.g., the long-term impact of the categorization of essential and non-essential workers) as well as potential opportunities raised by the pandemic (Onderzoeksraad, 2023).

Our data did not show evidence for a so-called “professional identity booster” effect among (female) essential workers. Professional identification levels reported among essential workers were not higher relative to before during the 1st wave of COVID-19 (Study 1), nor were they higher than for example women compared to men’s in non-essential professions during the 2nd peak wave (Study 1 and 2). Overall, for women in essential occupations there seemed little to gain, while for women in non-essential occupations there seemed more to lose with respect to their professional position (see also (Kruger et al., 2022)). The reasons for this remain unclear and warrant further investigation. From a policy-making perspective, one potential reason why (largely female) essential workers in the Netherlands did not show a ‘boost’ in professional identification during COVID-19 could be because by the time we collected our first data (end of May/June) the Dutch government just announced that salaries in health and domestic care sectors where essential workers work were not going to improve and little was done to alleviate high work pressures and risks from professionals in these sectors (EenVandaag, 2021). After all the rounds of public applause, not seeing this recognition materialize into better financial compensation and working conditions was to

many essential workers a deception. From a governance perspective, such missed opportunity could be a cause for the increased burn-out and turnover rates in healthcare during and after COVID-19, and underscores a growing call for institutional reform in healthcare systems in the Netherlands (R. A. Scheepers et al., 2023).

Limitations and Future Directions

There are several methodological limitations that need to be mentioned in relation to this research. The cross-sectional designs in this research, in comparison to longitudinal ones, warrant no clearcut conclusions about causality, nor do retrospective self-report measures (on how things were before COVID-19) allow for an objective comparison of the situation before COVID-19 relative to now given retrospective bias. Moreover, Studies 1 and 2 rely on highly-educated convenience samples, which reduces the generalizability of the results. Nevertheless, the consistent replication of our focal hypothesis across three data cohorts confirms the robustness of our results and the categorization effect of essential versus non-essential worker on professional identification. In addition, although respondents were provided with a list of occupations labelled as essential by the Dutch government, data are self-reported and could therefore be liable to over- or under-reporting. Note however that percentages of essential and non-essential workers (and their distribution across genders) found in our data are comparable to national averages. Finally, given our in-depth focus on the Netherlands, we are unable to consider whether relationships found hold for other country contexts. Future research using comparative, representative data for multiple countries would be an improvement in this regard.

Our findings provide multiple avenues for future research. Alongside single country case study evidence on the impact of the categorization of non-essential work, the results presented here offer a foundation for the relevance of social psychological mechanisms during crises. It is evident from our data that the label “non-essential” worker generally acted

as a negative social identity cue, lowering professional identification levels among those declared non-essential as compared to essential. However, we also know that people's coping mechanisms to appraise and deal with such identity threats vary greatly. In crisis situations, some people stay calm, respond resiliently and appraise the crisis situation as a challenge, which motivates a pro-active individual or collective response to try and turn things around for the better. Yet others may experience the situation as a threat rather than a challenge, evoking emotions such as anxiety, anger, feeling paralyzed, causing the situation to be appraised in terms of loss or defeat (Berjot et al., 2013; Branscombe et al., 1999b; Petriglieri, 2011). In future research, it is important to work towards a further refinement of when and for whom crisis situations are perceived as a threat or challenge to one's professional identity. Global crises situations such as the COVID-19 pandemic clearly change the meaning and security of employment in entire segments of the labor market. In future research, we recommend exploring applications of biopsychosocial model of challenge and threat (BPS-CT; (Blascovich & Mendes, 2010) in the face of crises that are cause for social identity concerns at work. This may help to gain better understanding of individual and socio-contextual factors (for example, what can organizations and leaders do) that help (or hinder) coping with threatening events or crises that may impact on people's work lives, and that offer resources that instigate a resilient response to professional identity threats.

Conclusion

Government communications during the COVID-19 global health crisis that imposed a social categorization of occupations as 'non-essential' versus 'essential', signaled a devaluation – a social identity threat - to the professional identification of those declared non-essential. This has detrimental consequences for people's sense of self-worth in their work - above and beyond how work circumstances (hours and location) during the COVID-19 actually changed. Furthermore, even though gender differences in professional identification did not

become apparent in the early phases of the crisis, women with non-essential occupations experienced the steepest decline in their professional identification, also negatively impacting their work productivity. To be on top of this and to effectively deal with the (unintended) consequences, crisis management policies should take a long-term perspective, include a social sciences perspective, and warrant for potential social inequalities that may inadvertently follow from crises management. This sets the stage for monitoring and dealing with these effects in future crises.

PREPRINT

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PREPRINT

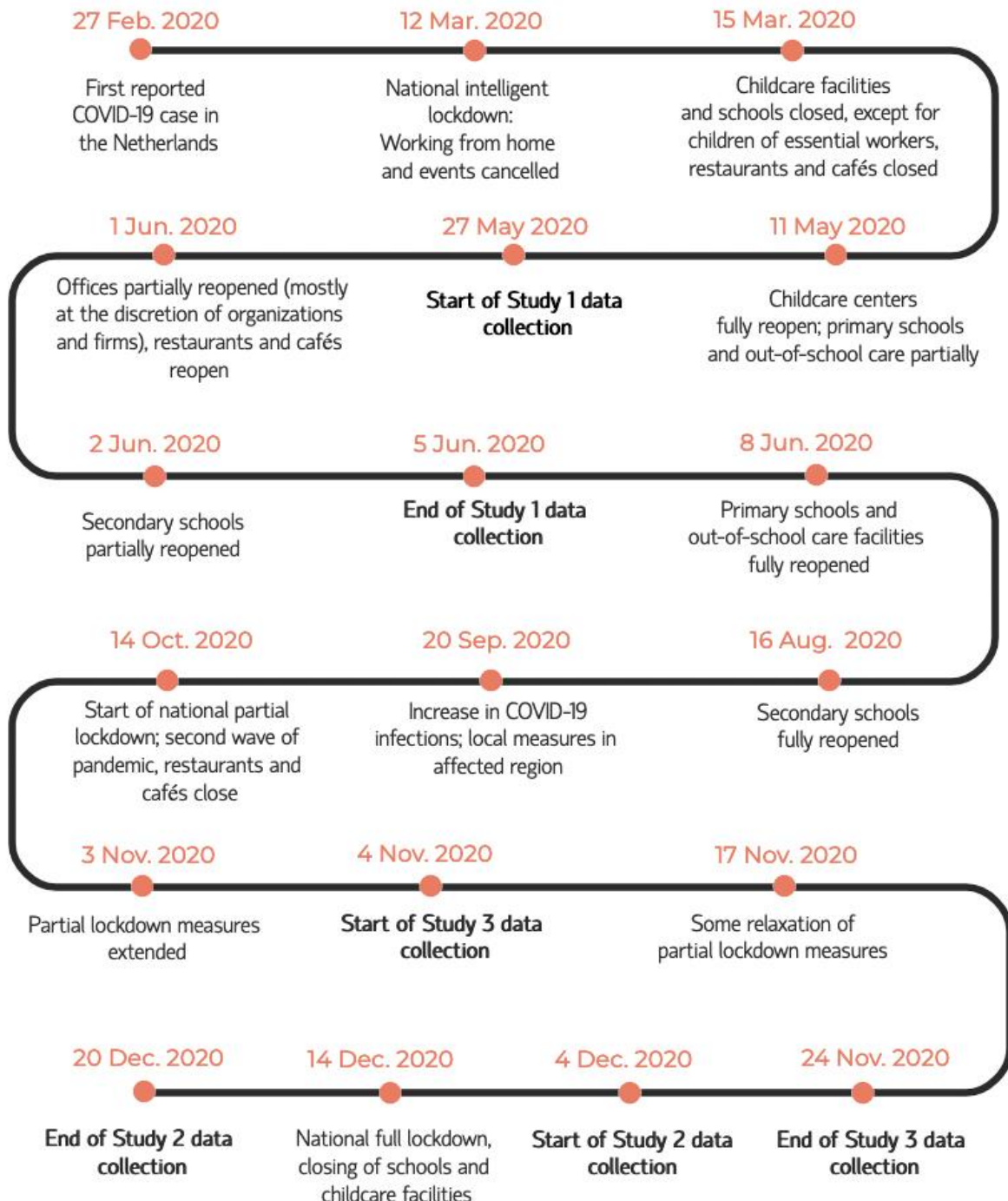
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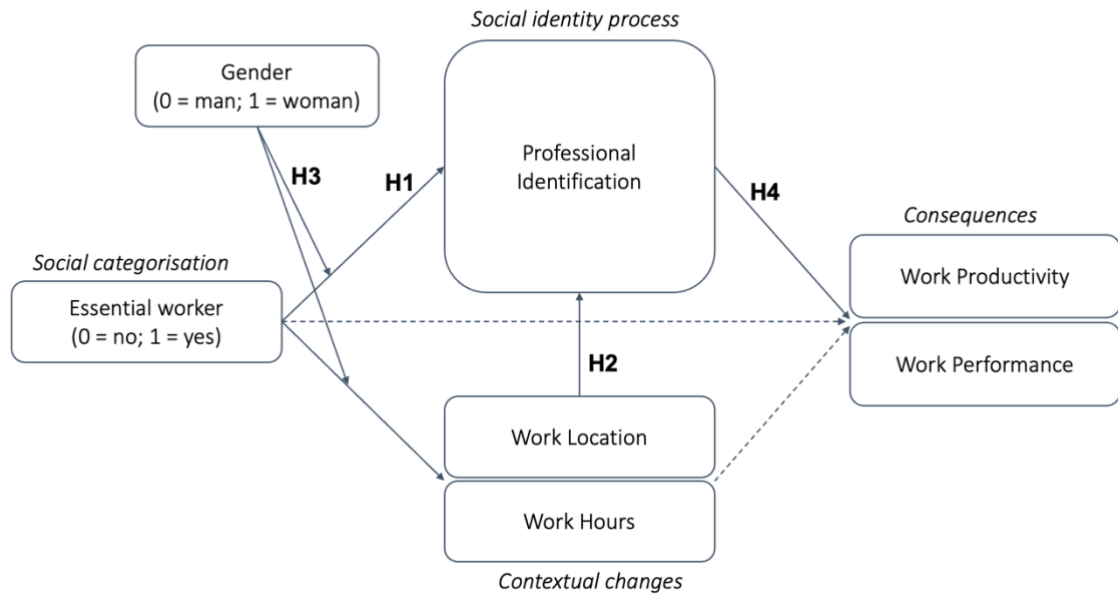
Figures

Figure 1. *Timeline of COVID-19 pandemic regulations in the Netherlands in 2020 and dates of Study 1 and Study 2 data collection*



Note. Study 1 refers to the Gender in Times of COVID-19 Cohort 1, Study 2 refers to Gender in Times of COVID-19 Cohort 2 and Study 3 refers to the COVID Gender Inequality Survey Netherlands (CoGIS-NL), wave 4 (LISS panel).

Figure 2: *Conceptual model of hypothesized relationships tested across 3 empirical studies*



PREP

Figure 3: Professional Identification (Private; panel A; Public; panel B) before and during the 1st Wave of COVID-19 (May/June, 2020), depending on (Non-)Essential Worker

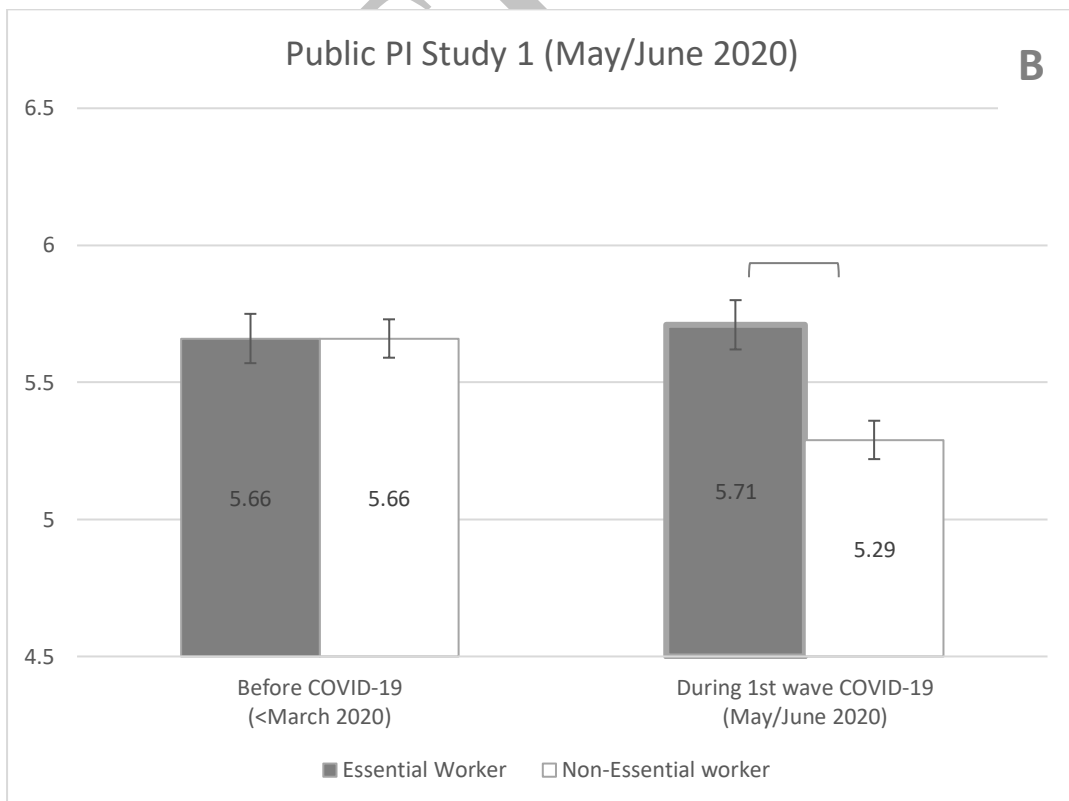
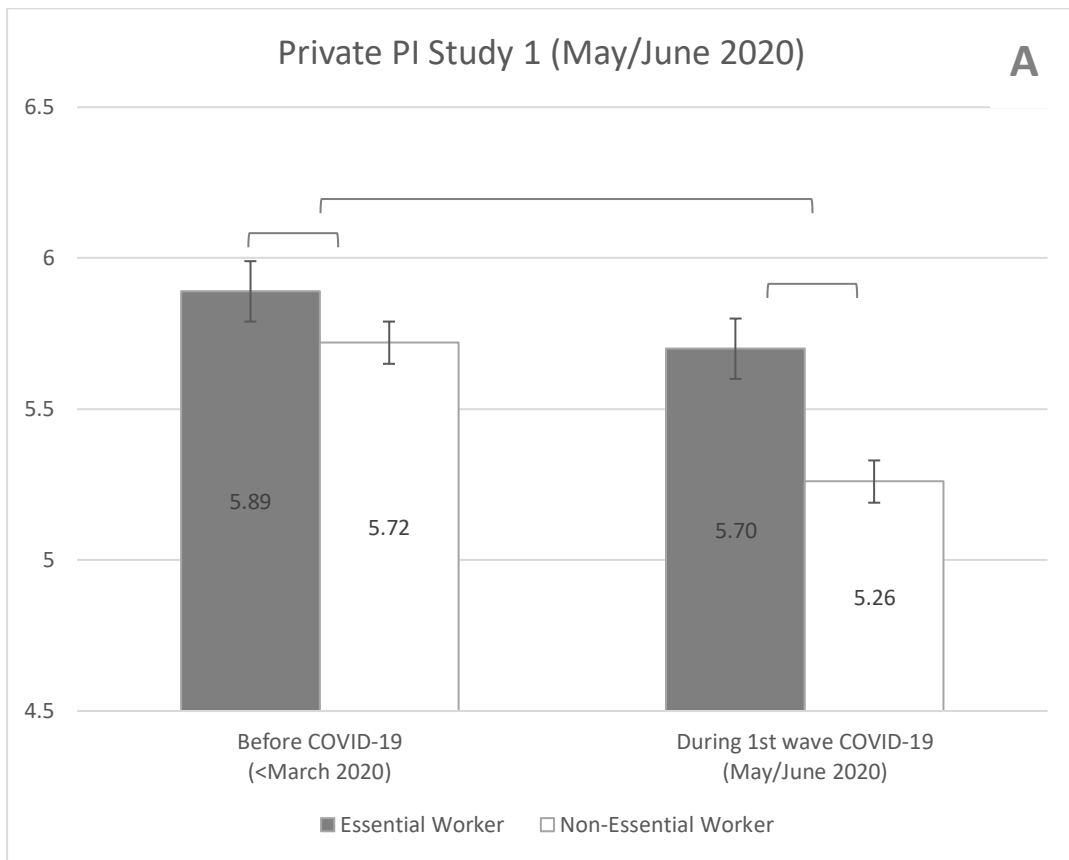
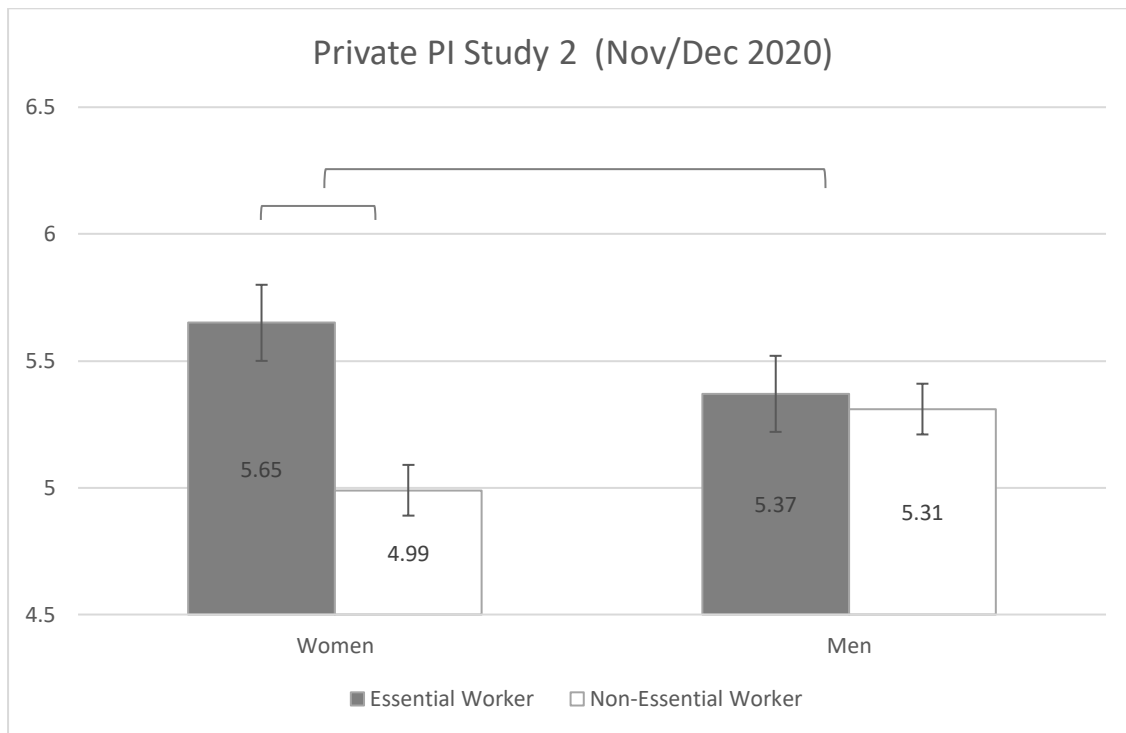
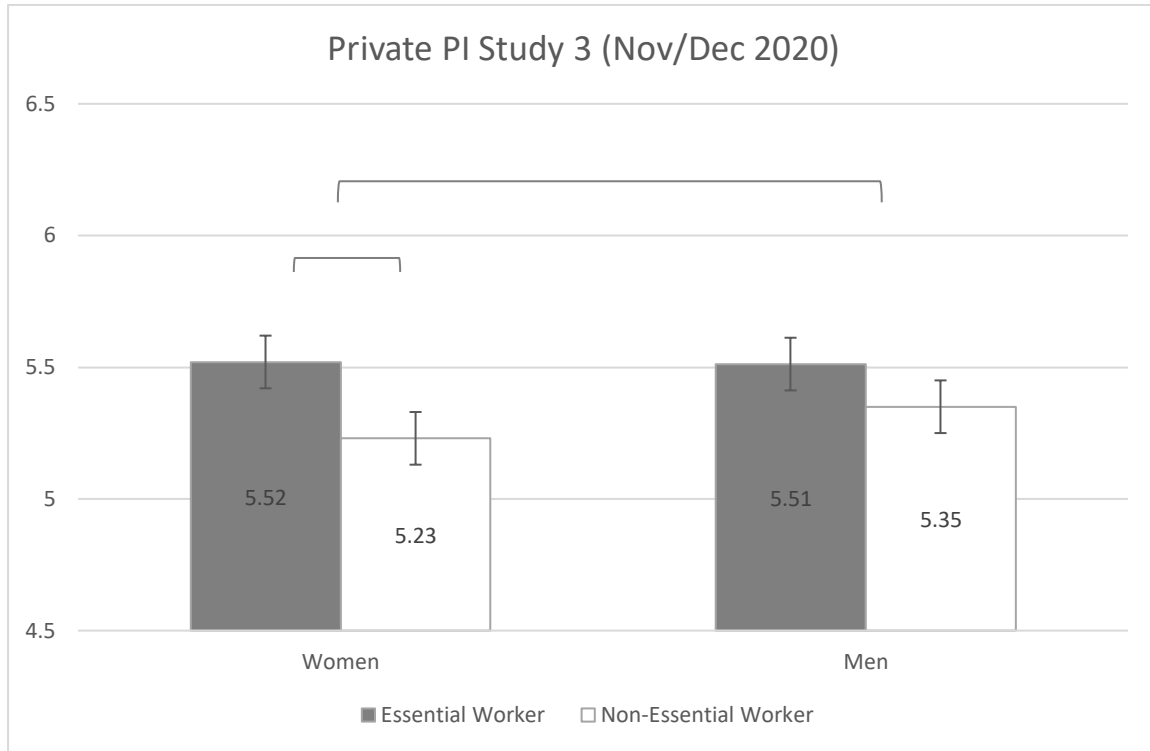


Figure 4: Professional Identification (Private) during the 2nd Wave of COVID-19 (Nov/Dec, 2020), as a function of Gender x (Non-)Essential Worker



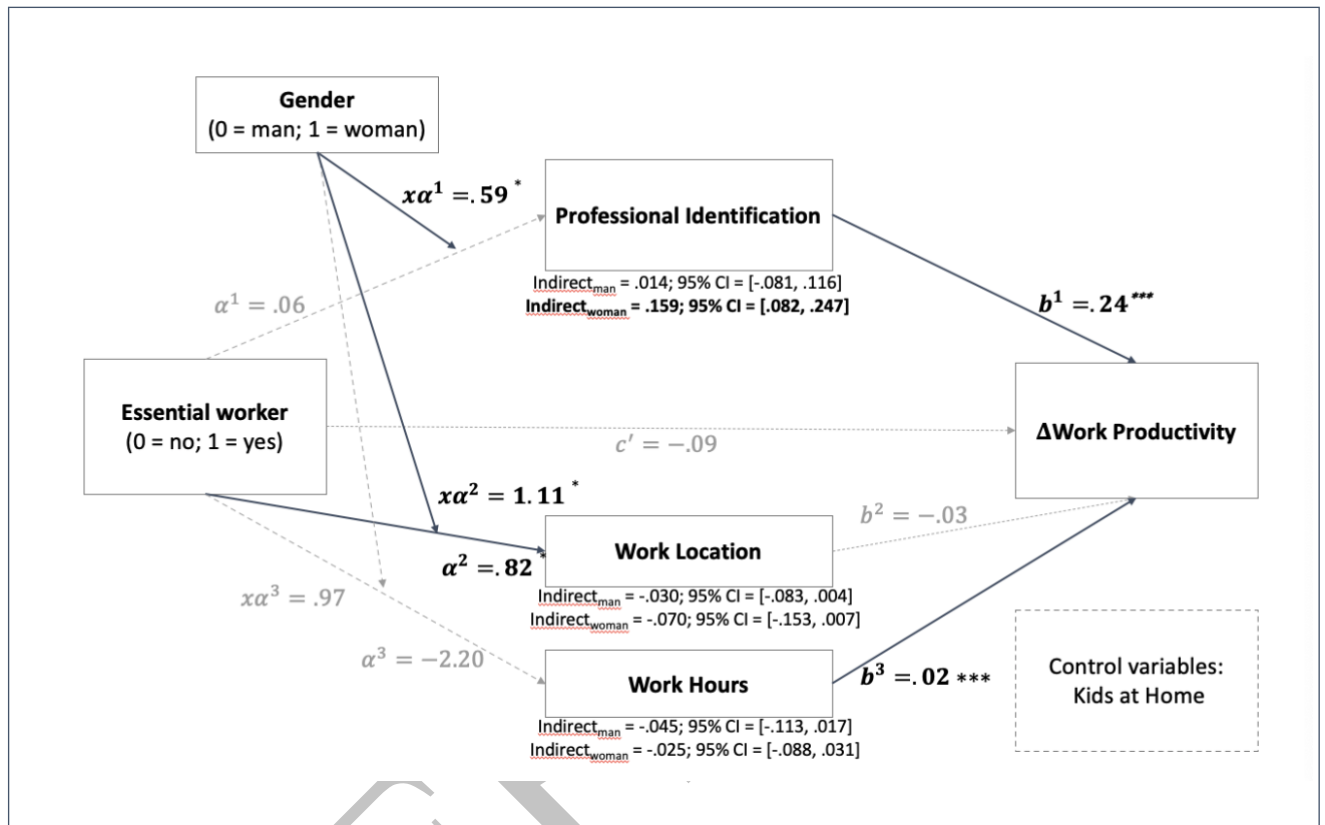
PREPARK

Figure 5: Professional Identification (Private) during the 2nd Wave of COVID-19 (Nov/Dec 2020) Study 3 (representative sample) as a function of Gender x (Non-)Essential Worker



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Figure 6: Parallel Moderated Mediation Model (Model 4; PROCESS) relation between PI of (non-)essential workers and changes in Work Productivity during COVID-19 in Nov/Dec 2020 (Study 2)



PRELIMINARY

Figure 7: Mediation Model (Model 4; PROCESS) relation between PI of (non-)essential workers to changes in Work Productivity (UPPER PANEL A) and Work Performance (LOWER PANEL B) during COVID-19 in Nov/Dec 2020 (Study 3)

