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The Psychological Threat of Being Declared Nonessential During the COVID-19 Pandemic: Effects on Professional Identification

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ABSTRACT

This research applies a social identity lens to show that, during the COVID-19 pandemic, the classification of occupations and labor market sectors as *essential* versus *nonessential* negatively affected the professional identity of those categorized as nonessential workers. We hypothesized that nonessential workers would report lower professional identification (PI) during the pandemic relative to essential workers; explored whether this was partially due to mandatory shifts to working from home and working fewer hours; whether gender differences would emerge in the impact of (non)essential categorization on PI; and if lower PI would negatively relate to work productivity and performance during the pandemic. Empirical evidence based on three 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 $3 = 735$) confirmed nonessential workers' lower PI relative to essential workers. During the first peak wave (Study 1), nonessential workers' lower PI was partially explained by being home-bound by reduced work hours. As the pandemic continued (second peak wave; Studies 2 and 3), gender differences emerged, with more negative consequences of being classified as nonessential for women than men. Nonessential workers' lower PI levels were associated with lower work productivity and performance. These findings underscore the importance of understanding social identity processes during the pandemic. We discuss the sociopsychological 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.

1 | Introduction

On March 11, 2020, the World Health Organization (WHO) declared COVID-19 a global pandemic (WHO 2020). To curb its spread, governments implemented lockdowns and social distancing regulations, restricting many workers from traveling to or performing work. An exception to this concerned the "essential workers." The International Labour Organization (ILO) 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" (ILO, n.d.). Typical essential occupations were in healthcare, food production, public utilities, safety, transportation, and education (Zimpelmann et al. 2021). Approximately one-third of Western workers were classified as essential. By default, the majority of the working population was classified as

"nonessential." Nonessential workers were deemed less crucial or vital to societal or economic functioning during the crisis. In the Netherlands, where this study is based, the government published an official list of essential occupations and relied strongly on its classification to impose regulations to curb the spread of the COVID-19 virus (FNV 2023).

Global health crises (e.g., black plague, 1350; Spanish Flu, 1918; SARS, 2003; and COVID-19), extreme events (e.g., wars and natural disasters), and digital revolutions (e.g., Artificial Intelligence) can historically be understood as external shocks to the system that 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 essential or nonessential sparked a scientific research agenda on how such strategies might change the organization and meaning of work, work–life balance, and work productivity (Kramer and Kramer 2020; Stephens et al. 2020). A significant body of empirical research emerging since then has focused on 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 and Almeida 2020; Denning et al. 2021; Gilleen et al. 2021; Hennekam et al. 2020; Keen and Santhiveeran 2023; Luo and Mao 2022; Rose et al. 2021; Vagni et al. 2020; Van Der Goot et al. 2021).

By contrast, little empirical attention has been devoted to the majority of the working population: the two-thirds of workers declared "nonessential" (see Ouwerkerk and Bartels 2022; van Zoonen et al. 2022 for exceptions). The lack of attention for this share of the working population is problematic, because it remains unclear what the psychological consequences are when governments consider a large share of occupations to be less important than others during global health crises. In this research, we aim to provide more insight into the sociopsychological ramifications of governmental crisis management that classifies entire fields of labor as *nonessential*. We take a social identity approach (Tajfel and 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 "nonessential" versus "essential" during the COVID-19 pandemic. Specifically, we empirically test the impact of being categorized as essential versus nonessential worker on professional identification (PI), that is, people's sense of self-worth and self-esteem as a professional (e.g., Ashforth et al. 2008). We will argue that being classified in an occupational group labeled *nonessential* (vs. *essential*) by the government undermines people's meaning-making and sense of self-esteem as a professional.

The focal hypothesis that we test is that the label "nonessential worker" (as compared to an "essential worker") led to lower levels of PI during the COVID-19 pandemic. Second, we explore whether this social categorization effect was partially driven by the concomitant mandatory changes in work circumstances (i.e., working from home and working fewer hours) during peak waves of infections and lockdown restrictions. Third, the COVID-19 pandemic generally had a more negative effect on women's paid employment compared to men's (OECD 2021), and studies have pointed to the gendered nature of (non)essential work (Carli 2020; Fisher and Ryan 2021; Leo et al. 2022; Meekes et al. 2023; Yerkes et al. 2020). Therefore, we also explore gender differences in the psychological response to being declared a (non)essential worker. Finally, we investigate the potential downstream consequences of nonessential workers' lower PI for work outcomes.

In the Netherlands, 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%) were classified as nonessential. We relied on three cross-sectional datasets collected via online surveys 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 first wave of COVID-19 infections and lockdown mandates in the Netherlands (Yerkes et al. 2020). Samples 2 and 3 were both collected during the second wave of COVID-19 infections in November and December of 2020, when the Netherlands was on the verge of entering the second and most restrictive lockdown of the pandemic. The target population was Dutch women and men in paid employment who were living with their romantic partner for at least 6 months[1]. See Figure S1 for a timeline of the COVID-19 regulations in the Netherlands in 2020.

2 | 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 and Turner 1979; Turner et al. 1987; van Veelen et al. 2016). Within this framework, one's professional identity can be understood as a crucial social identity. On average, people spend 90,000 h, or one-third of their lives at work (Gettysburg College n.d.). 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). People's professional identity also shapes self-views, informs values and belief systems, and regulates 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 for a living. These are expressions of one's professional identity and indicate the psychological importance people assign to their profession (Hekman et al. 2009). PI can thus be defined 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 and Abrams 1990; Rubin and 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 is devalued or marginalized in some way (Branscombe et al. 1999; Steele

et al. 2002). A threat to a social identity hampers the opportunity for group members to derive positive distinctiveness from their group, which, in the context of work, is the cause for negative thoughts and emotions, withdrawal or retreat (Cottrell and Neuberg 2005; van Os et al. 2015). Prior research largely focused on factors that instigate professional identity threats from within organizations, for example, administrative change, multidisciplinary teamwork, and digital innovation (Jussupow et al. 2022; McNeil et al. 2013; Mitchell et al. 2022). We extend this work and apply it to the context of societal or global health threats by arguing that being categorized as a nonessential worker by the government during the COVID-19 pandemic can also be a source of threat to one's professional identity, undermining the value and meaning of one's work.

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 nonessential may indeed affect the status and meaning of different forms of employment (Kramer and Kramer 2020; Stephens et al. 2020). In the Netherlands, the distinction between essential and nonessential 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 "nonessential." This classification was used as an important governance tool for coordinating outbreak response strategies.

Being labeled a "nonessential worker" during the COVID-19 pandemic may have given people the feeling that their professional group was abruptly devalued. Based on research in the social identity tradition on the minimal group paradigm (MGP; Tajfel et al. 1971), we have a strong theoretical basis to assume that when one is assigned to an ingroup category (intergroup categorization), and this ingroup is of devalued status relative to a higher-valued outgroup, this evokes an identity threat response. For example, when participants were categorized into one of two arbitrary groups in an experimental laboratory setting (e.g., the "red" ingroup vs. the "blue" outgroup) and learned that their ingroup scored lower than the outgroup on a task, this resulted in a negative response, both physiologically in the form of elevated blood pressure and psychologically in the form of lower group self-esteem scores (Scheepers and Ellemers 2005a). Applied to a real intergroup context, when governments categorized workers as essential versus nonessential during the COVID-19 pandemic, the devaluing label "nonessential" may have undermined one's positive sense of 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 also important to distinguish between private and public PI (Luhtanen and Crocker 1992). Private PI refers to people's *own* assessment of the value and positive feelings they derive from professional group membership and the emotional significance they attach to their professional identity (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 "nonessential" versus "essential" not only affected private PI but also the perceived level of recognition and respect that occupational groups receive through the eyes of the public (Kramer and Kramer 2020; Zhou 2005). For example, 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 to keep society functioning (e.g., collective applause and media attention; Wikipedia 2021). This sudden shift in the social status of typically low-status, low-paid "essential" occupations (e.g., healthcare, domestic work, education, and food industry; i.e., "from zero to hero"; Hennekam et al. 2020) versus the devalued status of the "nonessential" occupations during the COVID-19 pandemic can therefore be expected to undermine not only nonessential workers' private but also public PI relative to essential workers.

Taken together, we apply a social identity lens and its empirical knowledge base on intergroup categorization to the context of the imposed categorization of occupations as essential and nonessential during the COVID-19 pandemic. We hypothesize that people categorized as nonessential workers report lower (private and public) PI levels during the COVID-19 pandemic compared to people categorized as essential workers (*Hypothesis 1*).

3 | Changed Work Circumstances as an Explanatory Factor

Different from a laboratory-setting experiment on intergroup categorization such as in the MGP, our hypothesized negative psychological effect of being declared nonessential (vs. essential) worker on people's PI during COVID-19 is not happening in isolation of concomitant changes in work circumstances for nonessential and essential workers. For example, nonessential workers had to deal with combining work with mandatory stay-at-home measures, which essential workers did not. These changes may, in part, be instrumental in explaining why the professional identities of nonessential workers were psychologically undermined. In contrast to essential workers, nonessential workers were obligated by the government to work from home during the lockdowns in 2020, and many workers had to reduce their work hours, for example, to home-school their children or because there was less work available (Yerkes et al. 2022). The time we spend at work and the live interactions we have with co-workers serve as important social tools to validate and positively affirm our professional identity (Ashforth and Schinoff 2016; Pratt et al. 2006). For example, 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 PI (Smith et al. 2013a). Social identity theory further suggests that a strong 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 decrease or are abruptly taken away—as was the case with work-from-home mandates for nonessential workers, especially during the

first COVID-19 wave in spring 2020—negative outcomes may ensue. Indeed, 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), to work–life balance (Palumbo 2020), and to work well-being (Song and Gao 2020).

Building form this, we explore whether lower PI levels among nonessential versus essential workers during COVID-19 are, in part, explained by changed work circumstances for these two groups, namely reduced working hours and increased working from home during the COVID-19 pandemic (*Hypothesis 2*). Note that because we are bound to reality constraints as to how people in (non)essential occupations responded to mandatory stay-at-home calls from the government during different lockdown phases in 2020, we formulate Hypothesis 2 in an exploratory nature.

3.1 | 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 disproportionally more likely to have lost their jobs, 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 nonessential worker. Women and men in essential occupations were affected quite similarly, yet women in nonessential occupations were more likely than men to lose their jobs and experienced greater reductions in work hours and earnings (Meekes et al. 2023). Compared to women in essential occupations, women in nonessential 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). The increased time spent in household work reduced women's labor market participation more steeply than men's (André et al. 2021; Del Boca et al. 2020; Hupkau and Petrongolo 2020; Oreffice and Quintana-Domeque 2021). Given these gender differences in employment outcomes among nonessential workers, we sought to account for potential gender differences in the sociopsychological impact of the classification of occupations as (non)essential and workers' on PI levels.

Research on gender role beliefs and stereotypes (Fisher and Ryan 2021) can help to explain why governmental measures to categorize the labor market in essential and nonessential workers might have differentially affected women's and men's PI levels. Social role theory (Eagly and Wood 1999) describes how conventional feminine gender roles prescribe women to be 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 agentic "breadwinners," displaying traits such as stoicism and strength, taking the role of provider outside the home and 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 (Minestry of Finance 2020). Women in the Netherlands are the world champions in working part-time (OECD 2019) and earn significantly less for the same type of work (CBS 2023). Societal-level endorsement of traditional gender role beliefs is high in the Netherlands (Vink et al. 2022) and contributes to women's sustained marginalized position in paid employment relative to men in the Netherlands (Van der Brakel et al. 2020).

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's. Under conditions of crisis and uncertainty, people are especially likely to fall back on implicitly held belief systems and heuristics to guide their behaviors (Sherman et al. 2000; Tversky and Kahneman 1974). In cognitive crisis mode, gender role beliefs may be more likely to guide feelings and decisions and help justify gendered behaviors where women take over additional household and caretaking roles while men secure the financial position of the household (Brescoll et al. 2013; Fisher and Ryan 2021). From this, we argue that during the COVID-19 crisis, women who were classified as nonessential workers may have been "pushed back" into gender-traditional homemaker roles, with their professional identity becoming less central to their self-concept. In contrast, men in nonessential occupations were perhaps more shielded by their male breadwinner role, protecting them from experiencing identity threats of being declared nonessential, thus reporting less loss of professional identity during the COVID-19 pandemic than women. Therefore, we investigate whether nonessential occupations women report lower PI levels compared to men during the COVID-19 pandemic (*Hypothesis 3*).

3.2 | PI and Work Outcomes

Since the beginning of the COVID-19 pandemic, several studies demonstrated the impact of COVID-19 restrictions on work-related well-being (Carnevale and Hatak 2020), stress, and productivity (Kumar and Nayar 2020). For example, Dutch professionals who reported working (almost completely) from home during the COVID-19 pandemic reported having more difficulty in their work concentration and focus (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 psychological constraints when one's job is deemed nonessential remains unknown. In this research, we shed further light on this matter.

There is strong research evidence that the extent to which people identify with their profession, team, or organization forms a motivational driving force for their work attitudes and behaviors (Ellemers and De Gilder 2022; Ashforth et al. 2008; Ashforth and Schinoff 2016; Smith et al. 2013a). 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). Overall, the higher people's PI, the more positive work outcomes typically are. If, as we contend, working in a nonessential (vs. essential) occupation decreases PI, negative work-related outcomes are likely to ensue. We seek to explore the downstream consequences of lower professional identity levels during the COVID-19 pandemic for people's

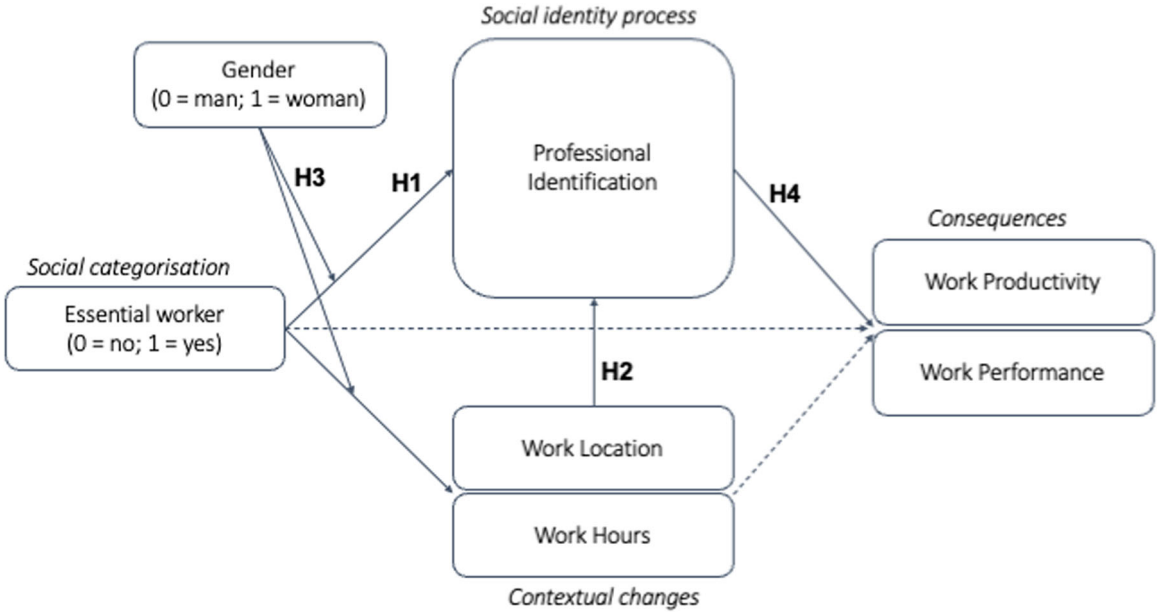

FIGURE 1 | Conceptual model of hypothesized relationships tested across three empirical studies.

self-reported work productivity and performance changes due to COVID-19 (Figure 1). Specifically, we hypothesize an *indirect effect* such that when one's occupation is declared "nonessential," a sense of positive professional identity is undermined, which, in turn, might lead to negative consequences for self-perceived work productivity and performance (*Hypothesis 4*).

3.3 | The Present Research

The current research set out to investigate whether being declared a nonessential (vs. essential) worker during the COVID-19 pandemic negatively affected women's and men's PI levels and what downstream effects this may have had on 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 of the Dutch population, collected via the Longitudinal Internet studies for the Social Sciences (LISS) panel. LISS 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. Data collection for Study 1 ($N = 371$) took place during 2 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 Study 2 ($N = 476$) and Study 3 ($N = 735$) took place in November/December 2020, during the second peak wave of COVID-19 infections.

3.4 | Transparency and Openness

We describe our sampling plan, all data exclusions (if any), and all measures in the study. The minimal data, analyses, code, survey, and research materials to support the findings are available on OSF (https://osf.io/7ufpe/?view_only=778a8888a3f9445cb067ff0c66085caa). Supplementary Information are available in the Appendix.

4 | 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 (Yerkes et al. 2020; Zimpelmann et al. 2021). At this time, the government categorized occupations and labor market sectors into two categories: *essential* (see FNV 2023 for an exhaustive list) and *nonessential*. By mid-May, COVID-19 infections began declining, and lockdown restrictions were gradually rescinded (Figure S1). At the end of May 2020, our survey was launched, asking participants to reflect on work–life experiences during this first lockdown.

4.1 | Methods

4.1.1 | Participants and Design

In total, $N = 540$ participants started the survey. Inclusion criteria 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 PI ($N = 371$). This resulted in a 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. 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 children currently living at home. All participants had paid work and, before the pandemic, worked for at least 8 h a week ($M = 35.59$; SD = 8.72 h a week).

4.1.2 | Procedure

An online Qualtrics survey was distributed among participants via convenience sampling and snowball techniques, based on soliciting participants via the personal (e.g., Facebook, WhatsApp, Twitter, and email) and professional (e.g., LinkedIn and email) network of authors involved in the project. The study was approved by the Ethics Committee of the first, third, fourth, and fifth author's university affiliation (FETC 20-272). 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 27 to June 8, 2020.

At the start of the survey, participants read and agreed to an informed consent form, ensuring, among others, anonymity, the voluntary nature of participation, the 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. All participants filled out questions about demographics, work situation, relationship status, living situation, and task divisions at home.

It took 15–20 min to complete the survey. Respondents were not rewarded for their participation. Although sample size was not predetermined (the goal was as large a sample as possible), sensitivity analyses on the most comprehensive statistical model in the current research (a 2×2 gender [between-subjects: man vs. woman) $\times$ profession (between-subjects: essential vs. nonessential] $\times 2$ [within-subjects: pre- and post-COVID-19] $\times 1$ model [covariate]) indicated that the study was sufficiently powered to detect small to medium effect sizes (e.g., Cohen's $f^2 \geq 0.08$; $\alpha = 0.05$, $1 - \beta = 0.80$).

4.1.3 | Measures

Participants were first asked to think about their lives before the COVID-19 pandemic and subsequently to think about their lives 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 fit 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 nonessential workers.

PI. PI before and during the COVID-19 pandemic was measured with 6 items, including private and public PI (adapted from Leach et al. 2008a; Luhtanen and Crocker 1992). The three private PI items were: Before the corona crisis started [Currently]: (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; $\alpha_{\text{pre-corona}} = 0.81$; $\alpha_{\text{during}} = 0.85$. The items measuring public PI were: (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; $\alpha_{\text{pre-corona}} = 0.92$; $\alpha_{\text{during}} = 0.96$. Items were measured on a 7-point Likert scale (1 = totally disagree; 7 = totally agree).

4.2 | Results

In Table S1, descriptive statistics (M, SD) and correlations (r) among variables are displayed. In this sample, 38.3% ($N = 142$) participants categorized as "essential workers," relative to a majority of 61.7% ($N = 229$) who categorized as "nonessential workers," 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 nonessential 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, $p = 0.004$. A mere 0.5% of respondents ($N = 2$) indicated they worked completely from home before the COVID-19 pandemic, whereas 71.7% ($N = 266$) indicated they worked completely from home during the first lockdown. On average, participants' weekly work hours were reduced by 4 h a week during the first lockdown compared to before. More detailed statistical information on changed work circumstances (work location and hours) contingent upon essential worker (yes/no) and gender (woman/man) can be found in the Supplementary Information.

4.3 | Does Categorization as Nonessential (Versus) Essential) Worker Decrease PI During the First COVID-19 Wave (H1)?

To test Hypotheses 1 and 3, two GLM repeated measures analyses were conducted with essential worker (no/yes) and gender (woman/man) as between-subjects factors, private and

public PI before and during COVID-19 as within-subjects factors, and kids at home as a covariate. Results showed that the level of private PI dropped significantly when comparing the pre-COVID-19 responses ($M = 5.83$, SE = 0.06) with the current first lockdown situation ($M = 5.50$, SE = 0.07, ($F_{(1,367)} = 11.07$, $p = 0.001$, partial $\eta^2 = 0.03$). Confirming Hypothesis 1, this decline in PI was steeper among nonessential ($M_{\text{diference}} = 0.47$; SE = 0.06; $p < 0.001$; 95% CI [0.35–0.59]) compared to essential workers ($M_{\text{difference}} = 0.19$; SE = 0.08; $p = 0.018$; 95% CI [0.03–0.35], $F_{(1,367)} = 7.76$, $p = 0.006$, partial $\eta^2 = 0.02$; Figure 2A). No evidence was found for gendered effects.

For public PI, there was no significant main effect between pre- versus first lockdown PI levels, ($F_{(1,367)} = 0.87$, $p = 0.35$, partial $\eta^2 = 0.002$). Yet there was a significant interaction between time and essential worker (no/yes) ($F_{(1,367)} = 19.30$, $p < 0.001$, partial $\eta^2 = 0.05$). Only nonessential workers experienced a significant decline in public PI from pre-COVID-19 times ($M = 5.66$; SE = 0.06) compared to during the first lockdown ($M = 5.29$; SE = 0.08, $F_{(1,367)} = 36.88$, $p < 0.001$, partial $\eta^2 = 0.09$). For essential workers, the reported level of public PI was similar across both timepoints ($F_{(1,367)} = 0.49$, $p = 0.486$, partial $\eta^2 = 0.001$; Figure 2B). Again, there was no evidence of gender differences.

4.4 | Do Changed Work Circumstances Explain Nonessential Workers' Lower PI (H2)?

To test Hypothesis 2, we relied on Andrew Hayes' PROCESS (Moderated) Mediation model 4 (Hayes 2012) to investigate whether changes in work circumstances (work location and work hours) relative to pre-COVID would account for (non) essential workers' differing PI levels. We investigated whether a *decrease* in work hours and an *increase* in working almost solely from home partially explained 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 first lockdown. Reported changes in work location and work hours were modeled to mediate the relationship between essential worker (no/yes) and PI during COVID-19, while controlling for pre-COVID-19 levels of PI. Gender and kids at home were included as covariates in the model. Note that 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 PI, but no such gender effects were found, and gender was therefore inserted as a covariate.

For private PI, the total model explained a significant proportion of variance, $R^2 = 0.442$, $F_{(6,364)} = 48.05$, $p < 0.001$. There was a significant indirect effect of work location ($\text{indirect}_{\text{location}} = -0.064$, SE = 0.031; 95% CI [0.01, 0.13]) such that relative to essential workers, nonessential workers' higher increase in working from home ($\alpha^1 = -1.19$, SE = 0.18; $t = -6.76$, $p < 0.001$) explained a steeper decrease in their PI during COVID-19 ($b^1 = -0.054$; SE = 0.03; $t = -2.02$, $p = 0.044$). Moreover, there was a significant indirect effect of work hours ($\text{indirect}_{\text{hours}} = 0.08$, SE = 0.04; 95% CI [0.011, 0.191]), such that relative to essential workers, nonessential workers' stronger decrease in work hours ($\alpha^2 = -2.22$, SE = 0.97; t = −2.29, $p = 0.023$) also explained a steeper decline in their PI during COVID-19 ($b^2 = -0.038$; $SE = 0.01$; $t = 7.92$, $p < 0.001$). The total effect of essential worker (no/yes) on private PI ($c' = 0.30$; SE = 0.097; $t = -3.081$, $p = 0.002$) dropped to nonsignificant ($c' = 0.015$; SE = 0.095; $t = -1.580$, $p = 0.115$) after insertion of the mediators.

Similarly, for public PI, the total model explained a significant proportion of variance, $R^2 = 0.268$, $F_{(6,364)} = 12.245$, $p < 0.001$. There was a significant indirect effect of work location ($\text{indirect}_{\text{location}} = -0.066$, SE = 0.031; 95% CI [−0.142, −0.015]), such that relative to essential workers, nonessential workers' stronger increase in working from home ($\alpha^1 = -1.205$, SE = 0.18; $t = -6.886$, $p < 0.001$) explained their steeper decline in public PI during COVID-19 ($b^1 = -0.061$; SE = 0.03; $t = -2.198$, $p = 0.029$). Moreover, there was a significant indirect effect of work hours ($\text{indirect}_{\text{hours}} = 0.079$, SE = 0.035; 95% CI [0.013, 0.161]) such that relative to essential workers, nonessential

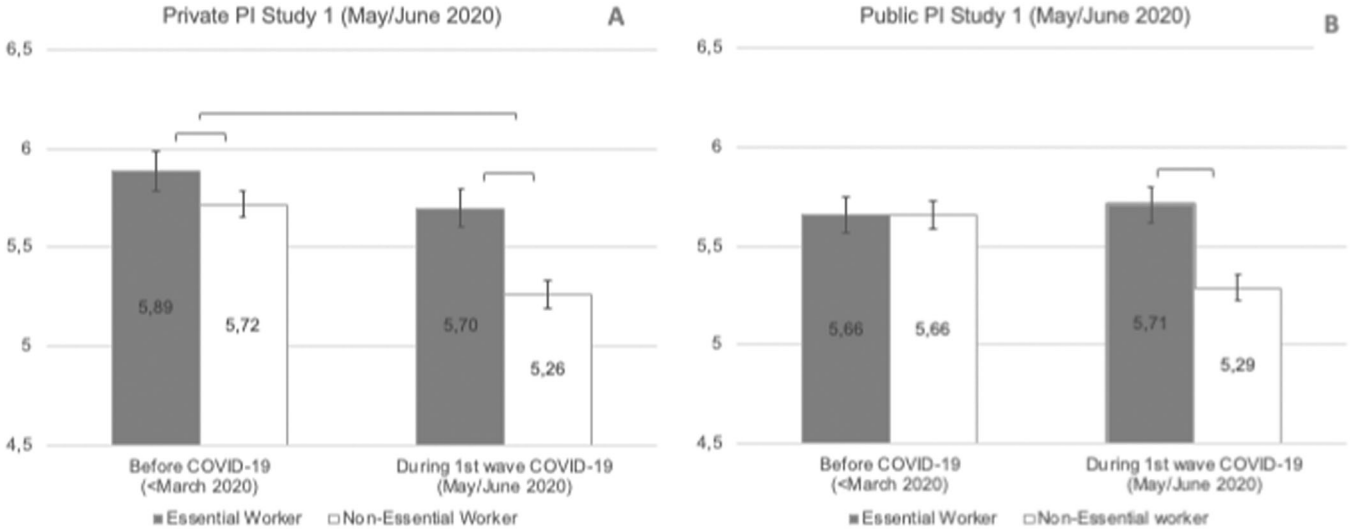

FIGURE 2 | Professional identification (private; A; public; B) before and during the first wave of COVID-19 (May/June, 2020), depending on (non)essential worker.

workers' stronger decrease in work hours ($\alpha^2 = -2.239$, SE = 0.966; $t = -2.319$, $p = 0.021$) explained a steeper decline in public PI during COVID-19 ($b^2 = -0.031$; SE = 0.005; $t = -6.265$, $p < 0.001$). The total effect of essential worker (no/yes) on public PI ($c = 0.416$; SE = 0.097; $t = -4.287$, $p < 0.001$) dropped but remained significant ($c' = 0.273$; SE = 0.098; $t = -2.792$, $p = 0.006$) after insertion of the mediators.

4.5 | Discussion

Study 1 results showed that nonessential workers reported lower PI levels during the first wave of COVID-19 compared to essential workers (H1). In addition, because essential workers worked significantly *more* from home and *reduced* their weekly work hours significantly more than essential workers did, this partially explained their lower PI during the first COVID-19 lockdown (H2). No evidence of gender differences was found (H3).

Study 2 examined whether the effects of being declared (non) essential on PI were replicated during the second wave of COVID-19 infections in the Netherlands (October 2020–February 2021). During this period, the Dutch government initially implemented a partial lockdown on October 14, 2020, with milder measures compared to the first lockdown (e.g., schools and daycare remained open until December). However, restrictions tightened as infection rates rose, leading to a full lockdown on December 14, 2020, including school closures, curfews, and the shutdown of nonessential stores (Government of the Netherlands 2020). These measures were stricter than those imposed in spring 2020.

The reintroduction of restrictions in fall 2020 faced notable resistance. Healthcare workers increasingly became targets of public hostility, including threats on social media, linked to frustration over restrictive measures (Ministry of Social Affairs SZW 2021). Additionally, employers in some sectors lobbied to be designated as "essential" to minimize productivity losses. Universities, for instance, transitioned to essential status. Resistance among employers in nonessential sectors also grew, with reduced leniency for workers unable to fulfill regular duties due to caregiving responsibilities or health risks. Thus, while the distinction between essential and nonessential workers remained, opposition to restrictions on nonessential sectors intensified during this second wave (NOS news 2020)

The first goal of Study 2 was to see if the government's distinction between essential and nonessential occupations was still a psychologically meaningful social categorization among the Dutch working population. A second goal of Study 2 was to answer the question of what potential consequences different PI levels among nonessential and essential workers would have for self-perceived work productivity changes. Specifically, we empirically test whether lower PI among nonessential (compared to essential) workers was associated with lower work productivity during the second peak wave of COVID-19 infections (*Hypothesis 4*).

5 | Study 2

From 4 to 14 December 2020, an updated version of the survey "Gender and Work in Times of COVID-19" was distributed among Dutch men and women. The same inclusion criteria and sampling method were applied as in Study 1[2]. Participants were asked to reflect on their work–family life over the past 4 weeks. A question about self-reported changes in work productivity due to COVID-19 was added to the survey. Note that at this timepoint, we no longer considered retrospective pre-pandemic measures of PI since retrospective methods on psychological constructs become more unreliable as time passes (Henry et al. 1994).

5.1 | Methods

5.1.1 | Participants and Design

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 PI ($N = 467$). 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 h a week before COVID-19, on average $M = 34.55$ h (SD = 11.40 h) a week.

5.1.2 | Procedure

The procedure for data collection was similar to Study 1: inclusion criteria were the same, and a similar questionnaire was administered. Study 2 (amendment based on Study 1) was again approved by the Ethics Committee upon submission request by the first, third, fourth, and fifth authors (FETC 20-619). The survey was available in Dutch and online for 2 weeks: from December 4 to December 20. Sensitivity analyses on the most comprehensive statistical model in the current study (a 2 gender [between-subjects: man *vs.* woman] × 2 essential worker [between-subjects: essential vs. nonessential] × 1 [covariate] model) indicated that the study was sufficiently powered to detect small to medium effect sizes (e.g., Cohen's $f^2 \geq 0.08$; $\alpha = 0.05$, $1 - \beta = 0.80$).

5.1.3 | Measures

Work Location. Work location was asked 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 of 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 categorize as essential or nonessential workers in the same fashion as in Study 1.

PI. PI during COVID-19 was measured using the same items as in Study 1, with three items on private PI ($\alpha = 0.79$) and three items measuring public PI ($\alpha = 0.93$), on a 7-point Likert scale.

Work Productivity. Work productivity was measured with one item: If you think about the past 4 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).

5.2 | Results

In Table S2, descriptive statistics (M, SD) and correlations (r) of the model variables are displayed. In this sample, 45% ($N = 210$) of respondents were categorized as an "essential worker," relative to a majority of 55% ($N = 257$) who were categorized as a "nonessential 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 labeling of essential occupations, such that more sectors were now categorized as "essential." As in Study 1, women were more likely to be essential workers (51% of women; $N = 155$) than men (33.7% of men; $N = 55$), $X^2(1) = 12.75$, $p < 0.001$. Of all participants, 31.7% ($N = 148$) indicated to work completely from home in November/December. This percentage was lower compared to Study 1 in May/June 2020, where 71.7% indicated working completely from home; still, nonessential workers worked more from home than essential workers. In contrast to Study 1, pre-pandemic reported work hours were no longer significantly different from current work hours during the second lockdown. More detailed statistical information on changed work circumstances (work location and hours) contingent upon gender and essential worker (yes/no) and gender (woman/man) can be found in the Supplementary Information.

5.3 | Does Categorization as a (Non)essential Worker (Still) Affect PI During the Second COVID-19 Wave? (H1)

Two ANCOVAs were conducted with the essential worker (no/yes) and gender (men/women) as between-subjects factors, kids at home as a covariate, and private and public PI as DVs. Confirming Hypothesis 1, private PI was again significantly lower among nonessential compared to essential workers, $F_{(1,462)} = 8.84$, $p = 0.003$, partial $\eta^2 = 0.019$. What is more, in contrast to Study 1, and in concordance with Hypothesis 3, the main effect of the essential worker was further qualified by gender, $F_{(1,462)} = 6.15$, $p = 0.013$, partial $\eta^2 = 0.013$ (Figure 3). Women were more strongly affected in their PI depending on whether they were categorized as a (non)essential occupation. Women in nonessential professions scored lowest on private PI ($M = 4.99$; SE = 0.10), whereas women in essential professions scored highest on private PI ($M = 5.65$; SE = 0.10), $F_{(1,462)} = 22.92$, $p < 0.001$, partial $\eta^2 = 0.047$. For men, levels of private PI were not significantly different between nonessential ($M = 5.31$; SE = 0.12) and essential workers ($M = 5.37$; SE = 0.16) workers, $F_{(1,462)} = 0.089$, $p = 0.766$, partial $\eta^2 = 0.000$. 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 nonessential workers in November/December 2020, $F_{(1,461)} = 0.50$, $p = 0.481$, partial $\eta^2 = 0.001$. On average, participants reported their level of public PI to be $M = 5.21$ (SE = 0.06), which is comparable to what nonessential workers reported in Study 1 in May/June 2020. No significant gender differences were found in public PI.

5.4 | Do Changed Work Circumstances During Second Wave COVID-19 (Still) Explain Nonessential Workers' Lower Private PI (H2)?

This sample from the second 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 nonessential workers. Still, nonessential workers worked more from home than essential workers did (see Supplementary Information for more detail). Furthermore, since we only found significant effects of classification as a (non)essential worker and gender on private

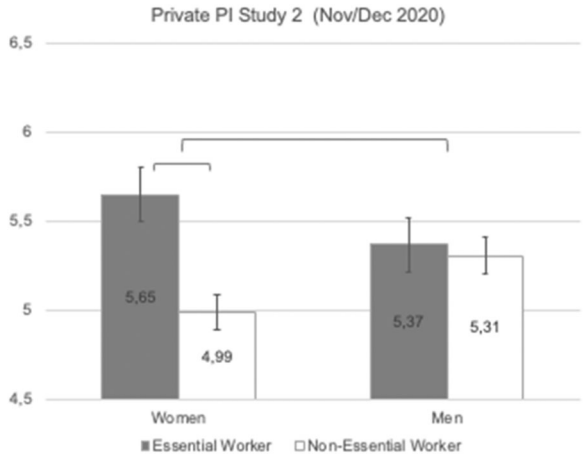

FIGURE 3 | Professional identification (private) during the second wave of COVID-19 (November/December, 2020), as a function of gender × (non)essential worker.

(not public) PI, we tested Hypothesis 2 with a moderated mediation model including essential worker (no/yes; IV), work location as the mediator, private PI as the DV, and gender (men/women) as the moderator (Model 7; Hayes 2012). Covariates were kids at home (no/yes) and work hours.

The total model explained a small yet significant proportion of variance in PI, $R^2 = 0.061$, $F_{(4,460)} = 7.520$, $p < 0.001$. Nonessential workers worked more from home (rather than on location) than essential workers ($\alpha = 0.81$, SE = 0.37, $p = 0.032$, 95% CI [0.072, 1.543]), and women worked more from home than men ($x = -0.59$, SE = 0.30, $p = 0.05$, 95% CI [−1.178, −0.010]). A significant interaction between essential worker and gender ($\alpha x = 1.087$, SE = 0.46, $p = 0.018$, 95% CI [0.191, 1.982] showed that while both women ($\alpha x_{women} = 1.894$, SE = 0.26, $p < 0.001$, 95% CI [1.377, 2.411]) and men ($\alpha x_{men} = 0.807$, SE = 0.37, $p = 0.032$, 95% CI [0.072, 1.543]) worked more from home when in a nonessential compared to an essential occupation, this effect was more than two times larger for women than for men. Contrasting Study 1, no evidence was found for H2, such that 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 second COVID-19 wave ($b = 0.02$, SE = 0.02, $p = 0.35$, 95% CI [−0.024, 0.070]). The direct effect of essential occupation (nonessential vs. essential) on PI remained ($c' = 0.49$, SE = 0.12, $p < 0.001$, 95% CI [0.253, 0.723]).

5.5 | Is Lower PI Among Nonessential Workers Associated With Lower Work Productivity (H4)?

In a moderated mediation model (PROCESS model 7; Hayes 2012), we investigated whether the lower PI reported by nonessential workers during the second wave of COVID-19 would be associated with lower self-perceived work productivity. Gender was included as a moderator, and kids at home as a covariate (Figure 4). There was a significant conditional indirect effect of essential worker on self-reported changes in work productivity via PI, *only* for women (conditional indirect$_{women} = 0.16$, SE = 0.04; 95% CI [0.081, 0.247]) but *not* for men (conditional indirect$_{men} = 0.014$, SE = 0.05; 95% CI [−0.081, 0.116]). Women's lower PI when in a nonessential (compared to essential) occupation ($\alpha x_{women}{}^1 = 0.65$, SE = 0.14; $t = 4.73$, $p < 0.001$) predicted lowered work productivity during the second COVID-19 wave ($b^1 = 0.24$; SE = 0.04; $t = 5.84$, $p < 0.001$). No indirect effects were observed via changed work circumstances.

5.6 | Discussion

Study 2 showed that in November/December 2020, those categorized as nonessential workers reported lower private PI compared to those categorized as essential workers (H1). Public PI levels did not significantly differ between essential and nonessential workers. The diminished public appreciation for essential workers and rescinded financial compensation plans by the government may have contributed to essential workers feeling less meaningful and/or appreciated as viewed through the eyes of the public (or at least no different from nonessential workers) during the second COVID-19 wave.

Because work circumstances (location and hours per week) largely bounced back to normal, these factors were no longer instrumental in (partially) explaining nonessential (vs. essential) workers' lower PI (H2). Yet what remained was the psychological impact of the categorization itself on people's sense of identity and self-esteem as (non)essential professionals. Moreover, during the second wave of COVID-19, gender differences began to appear in how men and women were affected by this categorization (H3). Specifically, lower private PI levels among nonessential versus essential workers were especially pronounced among women. In fact, private PI levels were lowest among women in nonessential occupations, significantly lower than private PI levels of men in nonessential occupations.

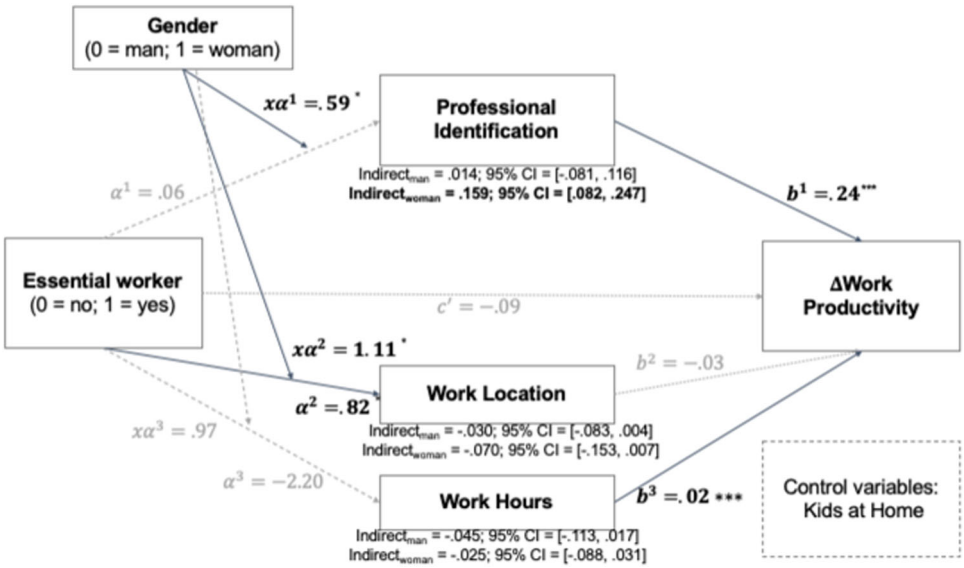

FIGURE 4 | Moderated mediation model relation testing how difference in PI between (non)essential affect changes in work productivity during COVID-19 (November/December 2020) contingent upon gender (Study 2).

In the final Study 3, our aim was to further validate and replicate findings from Studies 1 and 2—this time with a representative national probability-based sample drawn from population registers, also conducted during the second wave of COVID-19 infections in 2020 using the LISS panel. In addition to work productivity, 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 and 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 and 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 evidence showing a positive relation between PI levels and organization-level outcome variables, such as organizational commitment and citizenship behavior (Greco et al. 2022), we expected that nonessential (vs. essential) workers' lower PI levels would negatively correlate with engagement in extra tasks and role performances at work during the second wave of the COVID-19 pandemic.

6 | 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 (See Supplementary Information for more information). We were invited by the CoGIS-NL team to join the project and add items on (non)essential work and PI during their 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) PI, also because public PI was no longer affected by the label (non)essential in Study 2.

6.1 | Methods

6.1.1 | Participants and Design

The survey was presented to $N = 1456$ LISS panelists, and $N = 1097$ individuals (partially) filled out the questionnaire and completed the survey in full (75.3% response rate). 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), $N = 70$ (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.

6.1.2 | Procedure

Data were collected via an online survey called "Corona and your home situation," administered in the LISS panel. Study 3 was approved by the Ethics Committee upon submission request by the sixth author (FETC 20-269). Ethical approval for data collection further rests with CentERdata, the LISS-panel administrator, who requires all respondents to sign a written, online informed consent form before participating in the panel. The survey contained items measuring respondents' experiences relating to their paid work, division of childcare and household tasks, and well-being. The survey took approximately 7 min, was available in Dutch, and was online from November 4 to November 24, 2020. Comparable to Study 2, at the time of data collection, the Netherlands was in a partial lockdown in response to the second wave of infections in 2020.

6.1.3 | Measures

Participants were asked to think about their lives 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 to move 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 (vs. lower scores indicating more working from home) and thus that essential workers would score higher on this 5-point scale compared to nonessential 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, χ^2 tests) and as continuous (means, SD values, and AN(C)OVAs).

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?" Among other items, "paid work" was listed. The item was answered on a sliding scale from "−40 h per week less" to "+40 h 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."

PI. Private PI during the COVID-19 pandemic was measured as in Studies 1 and 2, with a 3-item scale (Leach et al. 2008b; Luhtanen and Crocker 1992; $\alpha = 0.94$).

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, $\alpha = 0.85$).

6.2 | Results

In Table S3, descriptive statistics (*M,* SD) and correlations (*r*) are displayed. Our analytical approach was similar to Study 2. In the LISS sample, 47.2% ($N = 374$) of participants were categorized as essential workers, relative to a small majority of 52.8% ($N = 388$) who indicated to belong to the category "nonessential worker." These percentages were comparable to Study 2. As in Studies 1 and 2, the odds for women to be classified as essential workers were significantly higher (57.4% of women; $N = 228$) than men's (35.2% of men; $N = 119$), $X^2(1) = 36.18$, $p < 0.001$. Of all participants, 24.0% ($N = 172$) indicated working almost completely from home due to COVID-19 measures, and nonessential workers worked more from home than essential workers. With regard to work hours, analyses showed that in essential occupations, women reported working about 3 h and 20 min more relative to pre-COVID-19, while men reported working about 1 h more. By contrast, in nonessential occupations, women reported working about the same number of hours as before, while men reported working on average 2 h and 40 min more compared to pre-COVID-19 (see further details in Supplementary Information).

6.3 | Does Categorization as (Non)essential Worker Still Affect PI at the Second COVID-19 Wave (H1)?

As in Study 2, an ANCOVA with essential worker (no/yes) and gender (men/woman) as between-subjects factors, kids as home as a covariate, and private PI as a DV was conducted. Corroborating Hypothesis 1 and replicating Studies 1 and 2, nonessential workers reported significantly lower levels of private PI during the second COVID-19 wave ($M = 5.29$, SE = 0.07) compared to essential workers ($M = 5.59$, SE = 0.08), $F_{(1,714)} = 8.54$, $p = 0.004$, *partial* $\eta^2 = 0.012$. Although the interaction between gender × essential occupation was not statistically significant ($F_{(1,714)} = 1.65$, $p = 0.200$, partial $\eta^2 = 0.002$), univariate effects showed a similar data pattern to Study 2, such that women in nonessential occupations scored significantly lower on private PI ($M = 5.23$; SE = 0.11) compared to women in essential occupations ($M = 5.66$; SE = 0.09), $F_{(1,714)} = 8.60$, $p = 0.003$, partial $\eta^2 = 0.012$. For men, PI was not significantly different between nonessential ($M = 5.35$; SE = 0.09) and essential workers ($M = 5.52$; SE = 0.12), $F_{(1,714)} = 1.33$, $p = 0.249$, partial $\eta^2 = 0.002$ (Figure 5).

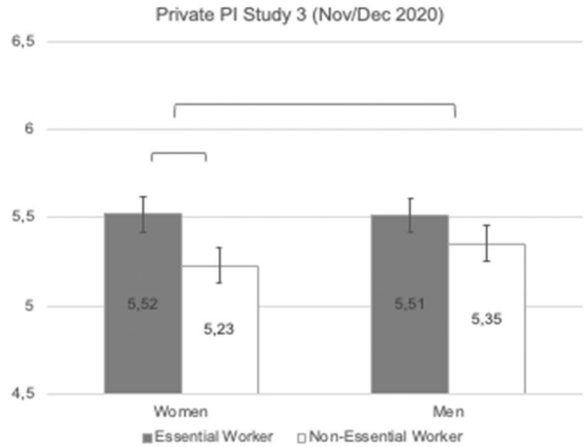

FIGURE 5 | Professional identification (private) during the second wave of COVID-19 (November/December 2020) Study 3 (representative sample) as a function of gender × (non)essential worker.

6.4 | Do Changed Work Circumstances at the Second Wave COVID-19 Explain Nonessential Workers' Lower PI (H2)?

A parallel moderated mediation analysis was conducted to test whether changes in work location and work hours of nonessential (vs. 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 a covariate. Similar to Study 2, no indirect effects were observed of (non)essential workers' PI levels via work location and work hour changes (all CIs contained zero; no support for H2). Work location ($b^1 = 0.001$, SE = 0.04, $p = 0.988$, 95% CI [−0.073, 0.074]) and work hour changes ($b^2 = 0.002$, SE = 0.01, $p = 0.789$, 95% CI [−0.011, 0.0146]) were not significantly related to PI levels during the second COVID-19 wave, nor were conditional indirect effects for women and men significant. The direct effect of essential worker (no/yes) on PI remained significant ($c' = 0.26$, SE = 0.11, $p = 0.012$, 95% CI [0.058, 0.474]).

6.5 | Is Lower PI Among Nonessential Workers Associated With Lower Work Productivity and Contextual Work Performance (H4)?

Finally, we tested whether nonessential workers' lower PI would affect their work productivity and contextual work performance (H4). While the earlier reported interaction effect of essential worker × gender on PI was nonsignificant, the effects of being labeled 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 2012), we investigated whether nonessential (vs. essential workers) lower (higher) PI during the second COVID-19 wave was associated with lower (higher) perceived work productivity and performance. The control variable was having kids at home (Figures 6 and 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, $R^2 = 0.015$, $F_{(5,670)} = 2071$ $p = 0.067$. As in Study 2, there was a significant conditional indirect effect of essential worker on work productivity via PI, again *only* for women (conditional $\text{indirect}_{\text{women}} = 0.018$, SE = 0.01; 95% CI [0.001, 0.044])) but *not* for men (conditional $\text{indirect}_{\text{men}} = 0.007$, SE = 0.01; 95% CI [−0.007, 0.029]). Women's lower PI when in a nonessential (compared to essential) occupation ($\alpha x_{\text{women}}{}^1 = 0.37$, SE = 0.15; $t = 2.530$, $p = 0.012$) resulted in lower reported work productivity during COVID-19 relative to before ($b^1 = 0.04$; SE = 0.02; $t = 2.06$, $p = 0.040$). 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, $R^2 = 0.119$, $F_{(5,679)} = 18.123$, $p < 0.001$. There was a significant conditional indirect effect of essential workers on work productivity via PI, again *only* for women (conditional $\text{indirect}_{\text{women}} = 0.066$, SE = 0.03; 95% CI [0.019, 0.118])) but *not* for men (conditional $\text{indirect}_{\text{men}} = 0.023$, SE = 0.02; 95% CI [−0.028, 0.077]). Women's lower PI when in a nonessential (compared to essential) occupation ($\alpha x_{\text{women}}{}^1 = 0.40$, SE = 0.15; $t = 2.726$, $p = 0.007$) predicted lower contextual work performance during the second COVID-19 wave ($b^1 = 0.16$; SE = 0.02; $t = 9.00$, $p < 0.001$). During the second COVID-19 wave, there was also a somewhat puzzling significant indirect effect via work location, for both women (conditional $\text{indirect}_{\text{women}} = -0.065$, SE = 0.02; 95% CI [−0.114, −0.018]) and men (conditional $\text{indirect}_{\text{men}} = -0.034$, SE = 0.02; 95% CI [−0.067, −0.009]), such that the more essential workers indicated to work on location relative to from home, the *lower*

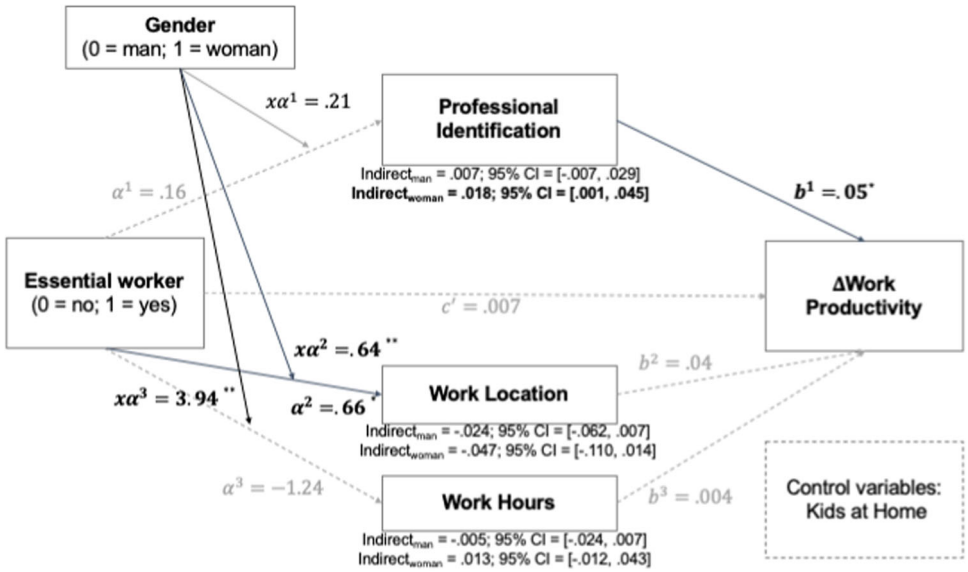

FIGURE 6 | Moderated mediation testing how differences in PI between (non)essential workers affect changes in work productivity during COVID-19 (November/December 2020), contingent upon gender (Study 3).

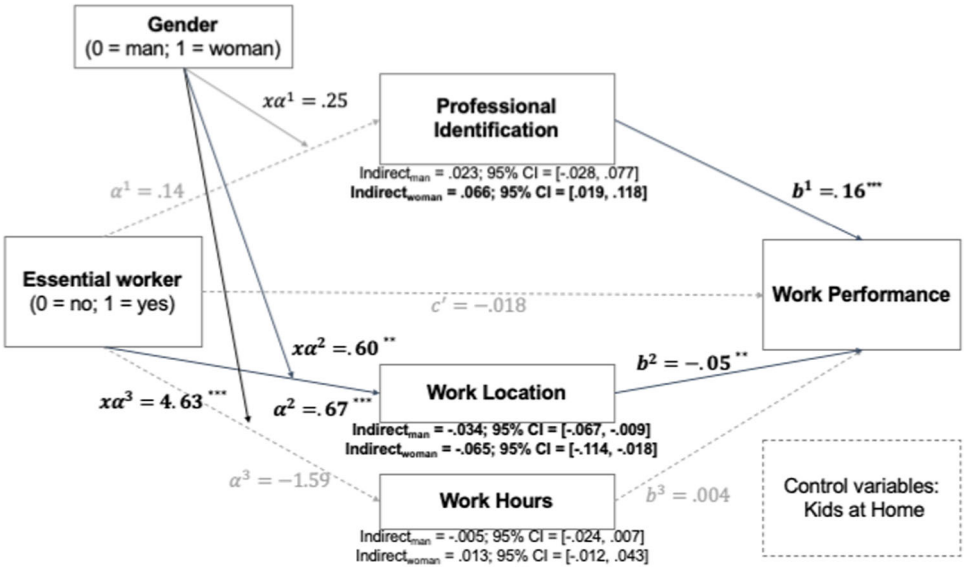

FIGURE 7 | Moderated mediation testing how differences in PI between (non)essential workers affect contextual work performance during COVID-19 (November/December 2020), contingent upon gender (Study 3).

levels of contextual work performance, $b^2 = -0.05$; SE = 0.02; $t = -2.78$, $p = 0.005$.

6.6 | Discussion

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. Study 3 results showed that the categorization of occupations as essential versus non-essential resulted in lower private PI levels for those declared nonessential compared to essential workers during the second wave of COVID-19 (H1); no evidence was found that nonessential workers' lower PI was explained by changed work circumstances (i.e., work hours and location) during the second wave (H2); there were gender differences, such that lower PI levels among non-essential versus essential workers were especially pronounced among women (H3). The gendered effects of nonessential (vs. essential) workers' lower PI levels translated to lower reported work productivity and contextual work performance among women (H4). No indirect effects were found for men.

In Study 3, similar to Study 2, gender differences emerged in adherence to work-from-home mandates. Women in nonessential professions were significantly more likely to follow government advice than men, who returned to on-site work regardless of occupation classification...On a psychological level, too, men seemed less affected by the categorization "nonessential" or "essential" in their PI levels—only women in nonessential 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 contextual work performance could be due to the 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, leaving little time for them to engage in *extra* role behaviors as measured with the contextual work performance scale.

7 | 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 and Kramer 2020; Stephens et al. 2020). With this research, we provide insight into the sociopsychological impact of governments' classification of occupations as "nonessential" versus "essential" during the COVID-19 pandemic on people's PI. We tested whether non-essential workers would report lower PI compared to essential workers during COVID-19 (*H1*), whether differences in changed work circumstances could (partially) account for that (*H2*), whether these effects might be gendered (*H3*), and what its downstream consequences could be for work productivity and performance (*H4*).

7.1 | Categorization as Nonessential Worker and Professional Identity

The social identity theory (Tajfel and Turner 1979; Turner et al. 1987) offered a valuable theoretical framework to support our empirical finding that the categorization of a "nonessential" worker can be self-internalized as a devaluation of one's professional identity. Across three samples collected during two peak waves of COVID-19 infections in April/May and November/December 2020, results consistently showed that nonessential workers' PI decreased relative to before COVID-19 (Study 1) and was significantly lower compared to essential workers during COVID-19 (Studies 1, 2, and 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 nonessential 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 nonessential 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 (Smith et al. 2013) and is in line with other work showing that the sudden inability to spend time working and imposed work-from-home policies, in physical isolation from fellow colleagues, was associated with nonessential workers tendency to detach from their work during the first COVID-19 lockdown (Ouwerkerk and Bartels 2022; Palumbo 2020; van Zoonen et al. 2022).

By the second peak wave of COVID-19 (Studies 2 and 3), nonessential workers continued to report lower PI than essential workers, but this was no longer linked to changed work circumstances. Work hours had largely normalized to pre-pandemic levels and were unrelated to (non)essential workers' lower PI. Also, more participants returned to their work locations, with around 30% working fully from home during the second wave (compared to 70% during the first wave). Although nonessential workers still worked remotely more than essential workers, this, too, was unrelated to PI. This aligns with research suggesting remote/hybrid working became "the new normal" (McPhail et al. 2023; Oude Hengel et al. 2022), with also the potential to foster productivity, well-being, and work–life balance (Charalampous et al. 2022). Initially seen as restrictive, remote work may have become a flexible, self-chosen norm, explaining its dissociation from PI.

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 "nonessential worker" on PI levels remained: The negative psychological effect of social categorization as nonessential (as compared to essential worker) on PI was consistently found across all three studies and lasted throughout the second wave, even though differences in the work situation (i.e., work location and time) between essential and nonessential workers were not that prevalent anymore. This demonstrates how deeply rooted social categorization effects in "us" and "them" are, and how social comparisons that communicate one group (i.e., nonessential) to be of devalued status relative to the other (i.e., essential), can impose a threat to a positive sense of identity with regard to one's professional group membership (Scheepers and Ellemers 2005b; Turner et al. 1987).

7.2 | Gendered Effects of Categorization as Nonessential Worker

Since the onset of the COVID-19 pandemic, scholars in the social 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 labor market position (André et al. 2021, 2023; Del Boca et al. 2020; Meekes et al. 2023; M. Yerkes et al. 2022). Adding to research on the gendered impact of COVID-19 on paid and unpaid task divisions, we studied the gendered impact of COVID-19 on sociopsychological identity concerns. Specifically, a focus on gender differences in professional identity concerns, that is, the (lack of) self-worth and self-esteem that working men and women were able to derive from their professional identity during COVID-19, is, to our knowledge, a novel avenue of research. Our findings show that during the first peak wave (Study 1), no gender effects were observed in PI levels depending on being categorized as an essential or nonessential worker, nor did men and women respond differently with regard to how their work circumstances changed during the COVID-19 pandemic. The sudden shock experienced at the start of the COVID-19 pandemic seemed to have corresponded with a general willingness to adhere to government-imposed restrictions (e.g., social distancing and overriding normal routines of work and care) in the Netherlands, with psychological consequences for nonessential workers' PI, irrespective of gender.

Corresponding to a shift from more egalitarian task divisions during the first lockdown toward more traditional gendered role divisions during the second peak wave of COVID-19 in November/December 2020 (André et al. 2023; Yerkes et al. 2022), Studies 2 and 3 showed that women were more inclined to follow up on work-from-home advice when in a nonessential occupation than men and that women in nonessential occupations reported lowest levels of PI while men reported higher levels of PI, irrespective of being classified as (non)essential worker. A potential reason for these gender differences in how men and women responded to being classified as "nonessential workers" during later stages of the COVID-19 pandemic could be because there was more obscurity about the classification of occupations as (non)essential, and people were more divided in their willingness versus resistance to adhere to COVID-19 lockdown restrictions (Onderzoeksraad 2023). Amid 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 and Haynes 2007). Higher ambiguity toward the lockdown restrictions and categorization as nonessential workers may have pushed women back into their traditional gender roles as "homemakers," evident from our data showing that they were working more from home and feeling more detached from their professional identity during the second COVID-19 wave. By contrast, amid this ambiguity, men in nonessential 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.

7.3 | Practical Implications

This research shows that government-imposed sanctions that classify an entire working population into two groups of "essential" and "nonessential" workers during a global health crisis have sociopsychological consequences with regard to how meaningful and worthwhile people feel in their work. When governments communicate a societal divide among two groups

of workers deemed "essential" versus "nonessential" to keep society functioning in response to an immediate health crisis, this categorization imposes an identity threat to nonessential workers' professional self-worth. By extension, this lower PI impedes nonessential 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 "nonessential" 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 nonessential workers (i.e., *no* access to schooling, *close* the business, and 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 nonessential 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 sociopsychological 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 physical health problems (e.g., ICU beds and capacity and infection rates) with insufficient attention to latent issues developing on a societal and psychological level (e.g., societal unrest, trust in government, social isolation, depression, burnout, and job loss). To improve preparedness for future pandemics, the government needs to give consideration to such sociopsychological effects (e.g., the long-term impact of the categorization of essential and nonessential 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. PI levels reported among essential workers were not higher relative to before during the first wave of COVID-19 (Study 1), nor were they higher than, for example, women compared to men in nonessential professions during the second peak wave (Study 1 and 2). Overall, for women in essential occupations, there seemed little to gain, while for women in nonessential 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 PI during COVID-19 could be that 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 burnout and turnover rates in healthcare during and after COVID-19 and underscores a growing call for institutional reform in healthcare systems in the Netherlands (Scheepers et al. 2023).

7.4 | Limitations and Future Directions

There are several limitations that need to be mentioned in relation to this research. First, 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. Second, Studies 1 and 2 rely on highly educated convenience samples, which reduces the generalizability of the results. Also, data in all studies only include participants in a romantic relationship currently living together; hence, the generalizability of results is restricted to these households. Third, although respondents were provided with a list of occupations labeled 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 nonessential 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.

Our findings provide multiple avenues for future research. Alongside single-country case study evidence on the impact of the categorization of nonessential 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 "nonessential" worker generally acted as a negative social identity cue, lowering PI levels among those declared nonessential 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 proactive 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, and feeling paralyzed, causing the situation to be appraised in terms of loss or defeat (Berjot et al. 2013; Branscombe et al. 1999; Petriglieri 2011). In future research, it is important to work toward further refinement of when and for whom crisis situations are perceived as a threat or challenge to one's professional identity. Global crisis situations such as the COVID-19 pandemic clearly changed the meaning of work for entire segments of the labor market. This may help to gain a better understanding of individual and sociocontextual factors (e.g., what can organizations and leaders do) that help cope with threatening events or crises that may impact people's professional lives and that offer resources that instigate a resilient psychological response.

8 | Conclusion

Government communications during the COVID-19 global health crisis that declared occupations as "nonessential" versus

"essential" signaled a devaluation of the PI of those declared nonessential. This had negative consequences for people's sense of self-worth in their professional lives. Furthermore, even though gender differences in PI did not become apparent in the early phases of the crisis, at later stages, women with non-essential occupations reported the lowest levels of PI, 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 crisis management. This sets the stage for monitoring and dealing with these effects in future crises.

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Data Availability Statement

The data that support the findings of Studies 1 and 2 are openly available in OSF at https://osf.io/7ufpe/?view_only=778a8888a3f9445cb067ff0c66085caa (reviewer-only link). The data that support the findings of Study 3 were retrieved from the LISS (Longitudinal Internet studies for the Social Sciences) panel administered by Centerdata (Tilburg University, the Netherlands). The DOI to the LISS Data Archive is https://doi.org/10.57990/s3d8-mx18. All the methods, data, and code for the empirical studies in this manuscript were stored on OSF (anonymous link): https://osf.io/7ufpe/?view_only=b37495c3b13f4264a7142c7b072634ae.

Endnotes

[1]Note that 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 for Study 1 and 2 and kept constant in Study 3.

[2]Apart from the social network of the authors, we also relied on the social network of master students involved in the project to recruit participants. We asked participants to indicate whether they had participated in this study before and excluded those who did to ensure a novel sample relative to Study 1.

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Supporting Information

Additional supporting information can be found online in the Supporting Information section.