



Predictors and Consequences of Work Alienation in Times of Crisis: Evidence from Two Longitudinal Studies During the COVID-19 Pandemic

Constantin Lagios¹ · Nicolas Lagios² · Florence Stinglhamber¹ · Gaëtane Caesens¹

Accepted: 17 June 2022

© The Author(s), under exclusive licence to Springer Science+Business Media, LLC, part of Springer Nature 2022

Abstract

The present research investigates whether employees felt more alienated from their work during the COVID-19 pandemic than before it, and examines the causes and consequences of this increase in work alienation. To do so, two longitudinal studies using data collected before (T1; October 2019 [Study 1] and November 2019 [Study 2]) and during the first wave of the COVID-19 pandemic (T2; May 2020 [Studies 1 and 2]) were conducted (i.e., repeated measures). Data of both studies were analyzed using unobserved effects panel data models. Results of Study 1 ($N = 197$) indicated that employees reported higher levels of work alienation during the COVID-19 pandemic. Going one step further, results of Study 2 ($N = 295$) showed that this higher feeling of work alienation may be explained by an increase in professional isolation and a decrease in meaningfulness of work induced by the COVID-19 pandemic. Results also demonstrated that this increase in work alienation negatively affected employees' job satisfaction, affective commitment, and turnover intentions. Findings are discussed and practical implications for managers are identified.

Keywords Alienation · COVID-19 · Isolation · Meaningfulness of work · Work attitudes · Panel data

Less than three months after the first cases were reported to the World Health Organization (December 2019), COVID-19 was officially characterized as a pandemic (March 2020; World Health Organization, 2020). Stating that the COVID-19 pandemic, and the lockdown that followed¹, have had a major impact on individuals' life appears to be a euphemism. Indeed, facing the spread of a virus which rapidly infected millions of people around the globe, governments were forced to implement unprecedented public health and social measures (World Health Organization, 2020). Most

notably, nationwide lockdowns were implemented, which have entailed far-reaching disruptions. At the macro-level, stock markets collapsed and global trades fell worldwide (Fernandes, 2020). At the micro-level, social contacts were limited or prohibited and work habits drastically changed (Kniffin et al., 2021; Rudolph et al., 2020). Almost overnight, working from home became the “new normal” (Wang et al., 2021), virtual communications replaced face-to-face interactions, and strict sanitary rules at work emerged (Kniffin et al., 2021; Rudolph et al., 2020).

Despite having little to no effect on mortality rates (Herby et al., 2022), such strategies were essential to limit the spread of the virus (Bourdin et al., 2021; Lau et al., 2020; Moris & Schizas, 2020). Yet, their impact on employees was far from marginal. Indeed, a large body of research documented that the COVID-19 pandemic resulted in significant work constraints and disruptions (e.g., work-home interference, job monitoring, online meetings) which increased symptoms of employees' ill-being, such as emotional exhaustion, videoconference fatigue, depression, and anxiety (Bennett et al., 2021; Chong et al., 2020; Wanberg et al., 2020; Wang et al., 2021). Surprisingly, little attention has been devoted to understanding how the COVID-19 pandemic influenced

¹ For clarity purposes, the generic term “COVID-19 pandemic” will be used throughout the rest of the article to both refer to the COVID-19 pandemic and the subsequent lockdown.

✉ Constantin Lagios
constantin.lagios@uclouvain.be

¹ Psychological Sciences Research Institute, Université catholique de Louvain, Place Cardinal Mercier, 10, L3.05.01, 1348 Louvain-la-Neuve, Belgium

² CEBRIG, DULBEA, Research Fellow F.R.S.-FNRS - Aspirant FNRS, Université libre de Bruxelles (ULB), Avenue Franklin Roosevelt, 42, 1050 Brussels, Belgium

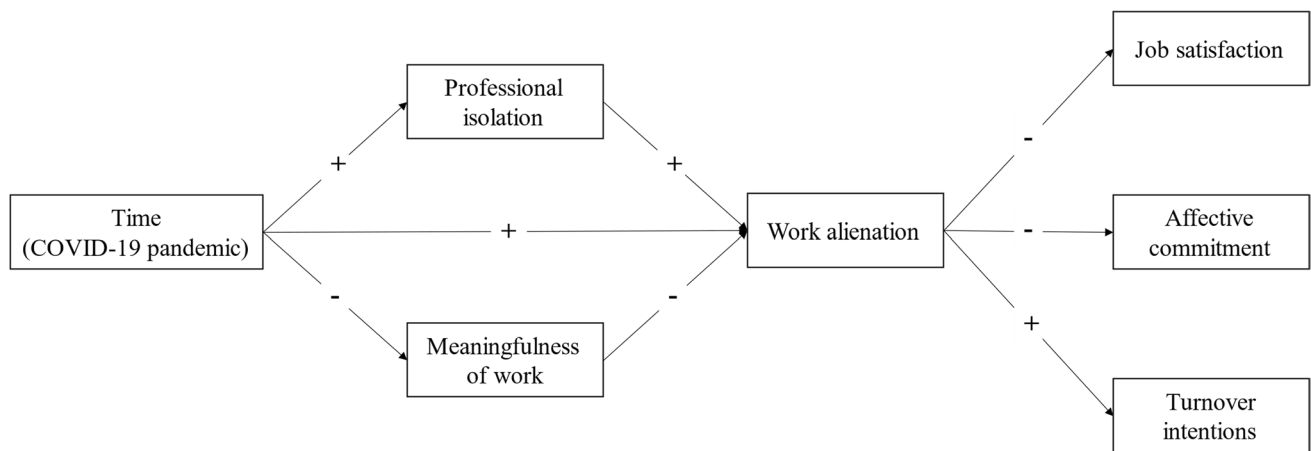


Fig. 1 Theoretical Model

employees' work attitudes (Song et al., 2020). Yet, failing to do so is critical as work attitudes are “one of the most useful pieces of information an organization can have about its employees” (Harrison et al., 2006, pp. 320–321). Indeed, work attitudes affect a variety of organizational and individual outcomes (Harrison et al., 2006; Judge & Kammeyer-Mueller, 2012), so not taking them into account prevents scholars and practitioners from having a comprehensive and accurate overview of the consequences of the COVID-19 pandemic (Restubog et al., 2020). This incomplete understanding is further exacerbated by the fact that most studies conducted about the COVID-19 pandemic have adopted cross-sectional designs that fail to model the effect of time (Rudolph et al., 2020).

Filling this gap, the present research focuses on a work attitude that has been largely neglected in the organizational psychology literature, i.e., work alienation. Work alienation is a negative attitude toward work that refers to an estrangement or disconnect from work (Nair & Vohra, 2009) and that arises in response to poor work conditions (Kanungo, 1979; Mottaz, 1981). More specifically, across two longitudinal studies using data collected before (T1; October and November 2019) and during the first wave of the COVID-19 pandemic (T2; May 2020), the objective of this research is threefold. First, it aims at investigating the extent to which employees felt more alienated from their work during the COVID-19 pandemic than before it (Studies 1 and 2). Second, it seeks to better understand the causes of this increase in work alienation (Study 2). To do so, we focus on two historically well-known predictors of work alienation that have been argued to be negatively impacted by the COVID-19 pandemic, that is professional isolation and meaningfulness of work (Kniffin et al., 2021; Kramer & Kramer, 2020; Kulikowski et al., 2021; Wang et al., 2021). The last objective of this research is to examine how this increase in

work alienation affected employees' job satisfaction, affective commitment, and turnover intentions (Study 2). Figure 1 provides an overview of the theoretical model.

The present research contributes to the existing literature in at least three major ways. First, by implementing an unobserved effects panel data model, our research answers the call of Rudolph et al. (2020) who urged for a longitudinal analysis of the effects of the COVID-19 pandemic in organizational settings. Specifically, our methodology allows us to study causal links (Wooldridge, 2010) and therefore provides unique insight into how the COVID-19 pandemic affected employees. Second, by focusing on work alienation, its predictors and its consequences during the COVID-19 pandemic, our research extends the nomological network of work alienation. Indeed, scholars have argued for a long time that work alienation cannot be dissociated from the larger societal context in which it occurs (Shantz et al., 2015; Twining, 1980; Wegner, 1975). Yet, few studies have examined work alienation with respect to a particular context, such as large-scale crises that have profound psychological and societal impacts (He & Harris, 2020). One notable exception is Seaman (1972) who analyzed work alienation during the spring preceding the events of May '68 in France. Thus, we complement the existing literature by documenting how employees' feeling of work alienation may evolve during a worldwide crisis such as the COVID-19 pandemic. Lastly, by examining professional isolation and meaningfulness of work as key predictors of work alienation, our research has important practical implications for organizations eager to adapt their work practices to the COVID-19 pandemic and beyond. Indeed, their managers have the ability to promote both social contacts (Golden et al., 2008) and meaningfulness of work (Bailey & Madden, 2016; Lysova et al., 2019) and play thus a central role in reducing work alienation.

Work Alienation and the COVID-19 Pandemic

Mainly popularized through the early economic and political writings of Marx (1844/1969; Nair & Vohra, 2009), work alienation has had a long tradition in social sciences. Indeed, the construct of work alienation has been adopted by various disciplines such as political sciences, philosophy, sociology, and psychology. However, despite this rich legacy, the construct has been characterized by a conceptual ambiguity (Kanungo, 1979; Nair & Vohra, 2009). For instance, for Hegel (1807/1977), alienation was a fundamental aspect of the development of spirit. Marx (1969) viewed alienation as the separation of a worker from the product of their work, the means of production, or the other workers involved in the production of work. In his seminal description, Seeman (1959) conceptualized alienation as a multidimensional construct characterized by five facets: powerlessness, meaninglessness, normlessness, isolation, and self-estrangement. Later, however, scholars (Kanungo, 1979; Mottaz, 1981; Nair & Vohra, 2009) argued that work alienation is a unidimensional construct whose core attribute is the notion of self-estrangement itself. The other four facets proposed by Seeman (1959) are nowadays considered as predictors of work alienation and “should not be equated with it” (Kanungo, 1979, p. 129).

Accordingly, work alienation is today defined as an “estrangement or disconnect from work, the context or self” (Nair & Vohra, 2009, p. 296). In other terms, work alienation is a negative attitude toward work that is characterized by both a state of separation between a person and their work (i.e., cognitive component) and a sense of pain and burden associated with work (i.e., affective component; Nair & Vohra, 2009, 2012, but see Dalal, 2012 for a recent conceptualization of work attitudes). As such, work alienation is distinct from other concepts reflecting the negative side of work, such as work withdrawal which refers to a set of behaviors (e.g., lateness and absenteeism) that employees engage in to avoid participating in the work situation (Hanisch & Hulin, 1990; Nair & Vohra, 2012). According to several scholars, work alienation arises in response to poor work conditions that create a discrepancy between the employee and their needs, values, ideals, or desires (Kanungo, 1979; Mottaz, 1981).

With the COVID-19 pandemic, many employees saw their work conditions abruptly altered (Kniffin et al., 2021; Rudolph et al., 2020). For instance, some employees were required to isolate and work from home while having to keep up with their family responsibilities (e.g., childcare). Other employees had to work in hazardous environments or with unclear instructions as organizations were facing

uncertainty and complexity (Kniffin et al., 2021; Rudolph et al., 2020). Overall, this alteration of employees’ work conditions may have created a context propitious to the development of a feeling of separation with their work (i.e., work alienation; Chiaburu et al., 2014; Fedi et al., 2016). Consistent with this, Guo et al. (2021) recently suggested that the macro (e.g., low job mobility) and micro (e.g., lack of control) work-related changes induced by the COVID-19 pandemic would translate in a greater feeling of work alienation among employees.

In line with the above, we hypothesized the following:

Hypothesis 1: Employees experienced higher levels of work alienation during the COVID-19 pandemic than before it.

Predictors of Work Alienation with Regards to the COVID-19 Pandemic

Far from solely examining the extent to which employees were more alienated from their work during the COVID-19 pandemic, the present research also investigates potential factors explaining this increase. In particular, we focus on professional isolation and meaningfulness of work for two main reasons. First, professional isolation and meaningfulness of work have been considered as key predictors of work alienation in prior research (Chiaburu et al., 2014; Mottaz, 1981; Nair & Vohra, 2010; Shantz et al., 2014). Indeed, these two constructs have been at the heart of the work alienation literature since its beginning. For instance, Marx (1844/1969), nearly two centuries ago, discussed work alienation as the consequence of both the lack of social connections with others at work and the inability to find meaning in one’s work. In addition, by focusing on both professional isolation and meaningfulness of work, our research is consistent with Mottaz (1981) who noted that “if work alienation is to be accurately assessed, explicit attention must be paid to the ‘total work situation’” (p. 527), which comprises both interpersonal (i.e., professional isolation) and work-related (i.e., meaningfulness of work) factors.

Second, isolation and loss of work meaningfulness have been argued to be two major challenges that employees particularly faced during the COVID-19 pandemic. Indeed, several scholars suggested that the COVID-19 pandemic has left employees socially isolated and unable to find meaning in their work (Andel et al., 2021; Kniffin et al., 2021; Kramer & Kramer, 2020; Kulikowski et al., 2021; Wang et al., 2021). These two key factors may thus have triggered a feeling of work alienation.

Professional Isolation

Professional isolation depicts a state of mind or a belief that one lacks social contacts with others in the workplace and arises when one's fundamental need for relatedness is frustrated (Golden et al., 2008). Marx (1844/1969) claimed that workers become alienated from their work when they are not socially connected to others. Specifically, he considered work alienation as a consequence of the neglect of the social and collective nature of work induced by capitalism. More recently, Conway et al. (2020) studied work alienation through a relational framework and suggested that the feeling of work alienation arises when employees "perceive that their work does not fulfill their relational needs" (p. 2680), as it is the case when they experience professional isolation. In line with this, empirical evidence supports that professional isolation and poor work relationships increase employees' feeling of work alienation (Amarat et al., 2019; Korman et al., 1981; Nair & Vohra, 2010; Pearlin, 1962).

As a result of the COVID-19 pandemic, the quantity and quality of social contacts for employees have been severely undermined (Wang et al., 2021). On the one hand, employees whose job could be done remotely had to isolate themselves and work from home. While working from home can have positive effects (e.g., increased autonomy; Charalampous et al., 2019), scholars also noted that it leads to several deleterious consequences, especially when it is imposed as it was the case during the COVID-19 pandemic (Chong et al., 2020). In particular, working from home has generally been found to increase the feeling of professional isolation because it reduces the possibility of social interactions, such as office chitchat, interpersonal networking, mentoring, or informal learning (Andel et al., 2021; Charalampous et al., 2019). Supporting this view, scholars showed that during the COVID-19 pandemic, employees working from home felt more isolated (Andel et al., 2021; Kniffin et al., 2021; Wang et al., 2021) and less connected with their coworkers and supervisors (Baert et al., 2020). On the other hand, employees whose job could not be done remotely were also likely to experience professional isolation. Indeed, with the vast majority of employees working from home, the few employees whose job could not be performed remotely ended up in a workplace where few employees were present. They also had to adhere to strict physical distancing rules from others, which led to a decrease in social interactions and an increase in the feeling of lack of social contact (Groarke et al., 2020). Although digital communication was made possible (e.g., texting, videoconferences), employees reported that it does not feel as fulfilling as normal contacts and lacks the closeness, intimacy, richness and effectiveness of face-to-face interactions (Golden et al., 2008; Kniffin et al., 2021; Wang et al., 2021).

Based on the above, we argued that the higher levels of professional isolation experienced by employees during the COVID-19 pandemic increased their feeling of work alienation. We therefore posited the following:

Hypothesis 2: Employees experienced higher levels of work alienation during the COVID-19 pandemic due to an increase in professional isolation.

Meaningfulness of Work

Meaningfulness of work refers to the extent to which one's work "is significant, facilitates personal growth, and contributes to a greater good" (Allan et al., 2018, p. 38). It is considered as one of the most valuable characteristics of work and constitutes a means of self-expression and self-realization for employees (Lepisto & Pratt, 2017; Lysova et al., 2019; Nair & Vohra, 2010). Consistent with Martela and Steger (2016), meaningfulness of work can be understood through three interconnected facets: coherence (i.e., the extent to which one's work is predictable and with little uncertainty), purpose (i.e., the extent to which one has a clear sense of one's goals and aims in one's work), and significance (i.e., the extent to which one deems one's work as valuable and important). When employees fail to find coherence, purpose and significance in their work, their perceptions of meaningfulness of work decrease (Martela & Steger, 2016). In such a situation, employees are not able to experience a sense of accomplishment in what they do and their work turns into a purely instrumental activity rather than an engaging one, thus creating a feeling of work alienation (Marx, 1844/1969; Mottaz, 1981; Nair & Vohra, 2010). Consistent with this argument, many studies showed that the lack of meaningfulness of work is positively related to work alienation (Chiaburu et al., 2014; Mottaz, 1981; Nair & Vohra, 2010; Shantz et al., 2014).

With the COVID-19 pandemic, the coherence, purpose, and significance employees usually find in their work may have been challenged, resulting in reduced perceptions of meaningfulness of work. Indeed, as organizations were forced to proceed to lay-offs or furloughs to stay afloat, many employees have experienced uncertainty and unpredictability regarding the future of their job and/or career (Kniffin et al., 2021; Kuntz, 2021; Lin et al., 2021; Rudolph et al., 2020; Yoon et al., 2021). Moreover, the numerous constraints imposed by the COVID-19 pandemic (e.g., virtual communications, social-distancing rules, travel disruptions) generated "unpredictable work demands for many occupations in different industries" (Chong et al., 2020, p. 1410), which may have decreased employees' sense of coherence. Second, the work-related disruptions induced by the COVID-19 pandemic (e.g., virtual communications, mandatory homeworking, inadequate technical equipment)

led to ambiguous communications, which gave less opportunities to get feedbacks, clarify work roles, or receive guidance on how to perform work tasks. This made it more difficult for employees to have a clear understanding of their job responsibilities and the goals they were expected to reach (Kuntz, 2021; Venkatesh et al., 2021; Wang et al., 2021), thus impairing their sense of purpose. Lastly, for many employees, the COVID-19 pandemic acted as a mortality cue which triggered death reflection (Zhong et al., 2021), that is a cognitive state of death awareness in which individuals put their lives into perspective (Grant & Wade-Benzoni, 2009). Such a death reflection may have motivated employees to reorganize their priorities and assign less significance to their work as compared to other domains such as health and family, thereby decreasing their sense of significance. Supporting this, Hennekam et al.'s (2021) qualitative analysis revealed that the COVID-19 pandemic made employees "reflect upon what they considered most important in life; for most, relationships with important others tended to be prioritized compared to their career" (p. 13).

In line with the above reasoning, we hypothesized that the loss of meaningfulness of work experienced by employees during the COVID-19 pandemic increased their feeling of work alienation. We therefore posited the following:

Hypothesis 3: Employees experienced higher levels of work alienation during the COVID-19 pandemic due to a decrease in meaningfulness of work.

Consequences of Work Alienation

Prior studies demonstrated that work alienation is an intrinsically negative phenomenon that has deleterious consequences for both employees and organizations (Chiaburu et al., 2014). To explain these detrimental effects, scholars heavily relied on Marx's (1844/1969) work who argued that alienated employees "feel miserable rather than content, cannot freely develop [their] physical and mental powers, but instead become physically exhausted and mentally debased" (p. 194). More recently, it has been suggested that alienated employees experience frustration and apathy (Shantz et al., 2014) and do not see their job as intrinsically rewarding (Conway et al., 2020), which translates in increased health-related problems and decreased job satisfaction (Chiaburu et al., 2014; Conway et al., 2020; Guo et al., 2014; Fedi et al., 2016; Shantz et al., 2014). Empirical work further demonstrated that work alienation leads to lower levels of affective commitment toward the organization because it reduces the connection employees have with their work setting and the beliefs and values they share with their organization (Chiaburu et al., 2014; Hirschfeld & Feild, 2000).

Finally, employees who feel alienated from their job have been shown to report higher levels of turnover intentions "because alienated employees are less fulfilled in the human need of belonging and have less reason to stay" (Chiaburu et al., 2014, p. 27). Consistent with this, we posited the following:

Hypothesis 4: Work alienation decreases employees' job satisfaction (H4a) and affective commitment (H4b), and increases employees' turnover intentions (H4c).

Studies' Overview

Hypotheses were tested through two longitudinal studies, both of which received approval from the Research Ethics Committee of the first author's institution. Both studies included two time periods (i.e., repeated measures). Data at T1 were collected before the COVID-19 pandemic and were part of larger surveys which aimed at investigating how employees perceive their organization. Data at T2 were collected during the first wave of the COVID-19 pandemic, specifically for the present research. Study 1 examines the extent to which employees reported being more alienated from their work during the COVID-19 pandemic than before it (H1). To gain a more in-depth understanding of this increase in work alienation and its consequences, a second study was carried out. Besides testing for a second time H1, Study 2 investigates whether the changes in professional isolation (H2) and meaningfulness of work (H3) experienced by employees during the COVID-19 pandemic can explain their higher feeling of work alienation. Moreover, it examines how this increase in work alienation affected employees' job satisfaction (H4a), affective commitment (H4b), and turnover intentions (H4c).

Analytical Strategy

Before testing our hypotheses, we first performed exploratory factor analyses (EFAs) on SPSS 25 by using the principal axis factoring extraction method with an oblimin rotation (Costello & Osborne, 2005). The factorial structure was then replicated through confirmatory factor analyses (CFAs) conducted on *Mplus* 8.6. Both analyses were performed at each time period. Alpha coefficients were also computed to test for scale reliability and zero-order correlations were calculated to examine the level of association between the variables of interest.

To test our hypotheses, we took advantage of the longitudinal design of our datasets and estimated a linear unobserved effects panel data model (Wooldridge, 2010) using Stata 16. Unobserved effects panel data models are widely used in economics and allow researchers to take into account the hierarchical structure of the data where time is nested within individuals and to control for unobserved heterogeneity (i.e., all factors affecting the outcome and that do not change over time; Wooldridge, 2010)². The key feature of our empirical approach is that we observed the same individuals over two time periods, specifically once before the outbreak of the COVID-19 pandemic (T1) and once during the COVID-19 pandemic (T2). All the variables were therefore measured at T1 and T2. This particular timing allows us to model the occurrence of the COVID-19 pandemic through the inclusion of a time dummy variable equal to *zero* at T1 and equal to *one* at T2. This time dummy variable captures how our variables of interest changed during the COVID-19 pandemic.

Our unobserved effects model is estimated by first differencing, meaning that each variable was differenced over time (for a similar approach, see Costa et al., 2011 and Wood et al., 2016). In practice, the difference of the scores of Y between T2 and T1 (ΔY) is regressed on the difference of the scores of X between T2 and T1 (ΔX)³. This therefore means that we are modeling within-person variations, that is how a given variable changed between T1 and T2 for a same individual. Hence, we investigate how changes in predictors between T1 and T2 caused

² Formally, our unobserved effects panel data model can be expressed as (Wooldridge, 2010):

$$y_{it} = \beta_0 + \delta_0 d_t + \beta_1' \mathbf{X}_{it} + c_i + \varepsilon_{it},$$

where i denotes the participant and t the time period. y_{it} is the dependent variable of interest. d_t is a dummy variable equal to *zero* at T1 (before the COVID-19 pandemic) and equal to *one* at T2 (during the first wave of the COVID-19 pandemic). δ_0 therefore indicates how y_{it} changed during the COVID-19 pandemic captures the effect of time, that is the occurrence of the COVID-19 pandemic on y_{it} . \mathbf{X}_{it} is a vector of independent variables of interest. Finally, c_i refers to unobserved heterogeneity, that is all factors affecting the outcome and that do not change over time

³ Consider the unobserved effects panel data model described in Footnote 2:

$$y_{it} = \beta_0 + \delta_0 d_t + \beta_1' \mathbf{X}_{it} + c_i + \varepsilon_{it}.$$

With two time periods, the model can be rewritten as:

$$\begin{aligned} y_{i1} &= \beta_0 + \beta_1 x_{i1} + c_i + \varepsilon_{i1}, & t = 1 \\ y_{i2} &= \beta_0 + \delta_0 + \beta_1 x_{i2} + c_i + \varepsilon_{i2}, & t = 2 \end{aligned}$$

First differencing means that we subtract the second equation with the first one. We therefore obtain the following first-differenced equation:

$$\Delta y_i = \delta_0 + \beta_1 \Delta x_i + \Delta \varepsilon_i,$$

which removes the effect of all time-invariant factors.

by the COVID-19 time dummy variable impacted the dependent variables of the model. Importantly, modeling within-person variations allows us to remove the effects of all time-invariant unobserved and observed person-level factors (e.g., gender, personality) that may bias the results if not accounted for.

Unobserved effects models therefore provide an attractive way of obtaining causal estimates in the presence of time-invariant omitted variables (Antonakis et al., 2010; Wooldridge, 2010). Note however that time-varying factors may still bias the results. To mitigate this concern, we controlled for several relevant time-varying factors such as work mode (a dummy variable which refers to whether participants are working on site or from home), organizational size, type of contract (a dummy variable for permanent or temporary contract⁴), and worktime (full-time or part-time 4/5, 3/4 or 1/2).

Study 1

Method

Participants and Procedure

The data used in this first study were collected at two time periods. T1 took place in October 2019 (i.e., before the COVID-19 pandemic) and T2 took place in May 2020 (i.e., during the first wave of the COVID-19 pandemic). Participants were recruited on Prolific Academic (a U.K. crowdsourcing platform dedicated to academic purposes) and were invited to complete an online survey at each time point (8 min at T1 and 10 min at T2) in exchange of a monetary compensation (£1.10 at T1 and £2 at T2). To take part in the studies, respondents had to meet the following criteria: be native English speakers, have an approval rate of at least 90% in past studies completed on the website, not be self-employed, and work full-time or part-time. Participants were assured of the anonymity and confidentiality of their responses. Each participant was assigned a unique, randomized identification code that was used to match their responses at T1 and T2.

At T1, 399 participants completed the survey, but 59 of them were removed from the analyses because they did not answer at least one attentional check question correctly (e.g., “For this statement, please tick strongly agree”). Thus, the final sample at T1 was composed of 340 participants. Of these 340 participants, 257

⁴ Temporary contract refers to fixed-term contract, seasonal job, or replacement contract.

participated in the T2 survey (response rate = 75.59%⁵). Thirty-one of them were nonetheless excluded from the analyses because they changed organization between T1 and T2 ($N = 14$) or did not provide a correct answer to at least one attentional check question ($N = 17$). Because this research specifically focuses on employees' work experience during the COVID-19 pandemic, participants who were no longer working at T2 were also excluded. Thirty participants were thus excluded because their job was suspended due to the COVID-19 pandemic (e.g., temporary unemployment, furloughed, or unpaid leave). Thus, the final sample of Study 1 consisted of 196 working participants.

Of these participants, 147 (75%) fully worked on site while 49 (25%) worked from home at least one day a week at T1. At T2, 49 (25.3%) of them worked on site while 145 (74.7%) worked from home (two participants did not provide an answer for T2). Participants came primarily from the U.K. ($N = 132$; 67.3%) although respondents from the U.S. ($N = 46$; 23.5%), Canada ($N = 10$; 5.1%), Australia ($N = 4$; 2%) and Ireland ($N = 4$; 2%) also participated in the study. Importantly, at T2, all these countries were facing the first wave of the COVID-19 pandemic and implemented nationwide lockdowns. Most participants were women ($N = 118$; 60.2%), the mean age was 37.73 years ($SD = 10.04$), and the average tenure in the organization was 7.41 years ($SD = 6.22$). In addition, the majority of the participants held a bachelor's degree ($N = 84$; 42.9%), worked in organizations with 50 to 249 employees ($N = 45$; 23%), and worked full-time ($N = 150$; 76.5%). Finally, most participants worked in the private sector ($N = 125$; 63.8%) and primarily in health and social care ($N = 28$; 14.3%), teaching and education ($N = 25$; 12.8%), retail and sales ($N = 24$; 12.2%), IT and information services ($N = 18$; 9.2%), and accountancy, banking, and finance ($N = 17$; 8.7%).

Measures

Work alienation was measured with the 8-item scale of Nair and Vohra (2009; e.g., "I do not feel connected to the events in my workplace"). To consider the context of the COVID-19 pandemic, the items at T2 were introduced by the instruction "Since the start of the COVID-19 lockdown period...". Participants indicated their responses on a 7-point Likert agreement scale.

⁵ To determine whether attrition led to non-random sampling in Studies 1 and 2, we followed Goodman and Blum's (1996) recommendations. We found no evidence of non-random sampling, meaning that the probability of having also completed the survey at T2 did not depend on the values of one or more variables (Goodman & Blum, 1996).

Control variables The set of control variables included work mode, organizational size, type of contract, and worktime. As the interpretation of the findings remained the same with and without controls, we provided below parsimonious results, that is estimates that do not include any control variables (Becker, 2005). The estimates with controls are reported in online supplements (Fig. S1).

Results

Factor Analyses

The EFAs conducted at both time periods indicated a one-factor solution (explaining 73.70% of the total variance at T1 and 75.71% of the total variance at T2). The CFAs further supported this one-factor structure (T1: $\chi^2(20) = 21.649$; RMSEA = 0.021; SRMR = 0.018; CFI = 0.998; TLI = 0.997 and T2: $\chi^2(20) = 22.990$; RMSEA = 0.028; SRMR = 0.017; CFI = 0.997; TLI = 0.995). Loadings at T1 were all greater than 0.74 (EFA) and 0.73 (CFA) while loadings at T2 were all greater than 0.72 (EFA) and 0.70 (CFA)⁶.

Relationships Among Variables

Table 1 displays the means, standard deviations, reliability coefficients, and correlations among first-differenced variables. Table S2 (online supplements) provides the means of each variable at each time period.

Unobserved Effects Panel Data Model

As depicted in Fig. 2, the results indicated that employees were more alienated from their work during the COVID-19 pandemic than before it ($b = 0.28$, $p = 0.002$), which hence supports Hypothesis 1.

Study 2

Method

Participants and Procedure

As for Study 1, the data of this second study were collected at two time periods. T1 took place in November 2019 (i.e., before the COVID-19 pandemic) and T2 in May 2020 (i.e., during the first wave of the COVID-19 pandemic). Participants were recruited on Prolific Academic and were invited to complete an online questionnaire at each time point

⁶ The within-person and between-person variances are provided in Table S1 (online supplements).

Table 1 Descriptive Statistics and Intercorrelations among Variables for Study 1 (above diagonal) and Study 2 (below diagonal)

	M_1	SD_1	α_1	1	2	3	4	5	6	7	8	9	10	M_2	SD_2	α_2
1. Work mode	-	-	-	-	-.05	.00	-.04	-	-	-.03	-	-	-	-	-	-
2. Organizational size	-	-	-	-.01	-	.07	-.05	-	-	-.03	-	-	-	-	-	-
3. Type of contract	-	-	-	-.08*	.02	-	-.13	-	-	-.02	-	-	-	-	-	-
4. Worktime	-	-	-	-.01	-.01	.03	-	-	-	.09	-	-	-	-	-	-
5. Professional isolation	-	-	-	.21***	-.04	-.10**	.07*	-	-	-	-	-	-	.19	1.38	.94/.91
6. Meaningfulness of work	-	-	-	.00	.04	.00	-.10**	-.01	-	-	-	-	-	1.15	1.74	.90/.93
7. Work alienation	.28	1.24	.95/.95	.05*	-.08*	.04	.04	.31***	-.34***	-	-	-	-	-.20	1.27	.90/.93
8. Job satisfaction	-	-	-	.04	.02	-.14**	.00	-.04*	.24***	-.46***	-	-	-	-.45	.85	.94/.94
9. Affective commitment	-	-	-	.02	-.04	-.20***	-.10*	.02	.25***	-.30***	.40**	-	-	.13	1.23	.93/.91
10. Turnover intentions	-	-	-	-.01	.03	.05*	-.03	.02	-.14**	.33***	-.48***	-.28**	-	-.30	.70	.94/.96

$N_1=196$ and $N_2=295$. Reliability alpha values are given for each time period (T1/T2). Each variable is constructed by first differencing its respective score at T2 and T1. Work mode refers to whether participants are working from home or on site. A participant is said to homework if they work from home at least one day a week. The variable can take two values: 0 if *not working from home* and 1 if *working from home*. Organizational size can take 8 values: 1 for 1–9 employees, 2 for 10–49 employees, 3 for 50–249 employees, 4 for 250–499 employees, 5 for 500–999 employees, 6 for 1000–4999 employees, 7 for 5000–9999 employees, and 8 for more than 10,000 employees. Type of contract can take two values: 0 if the participant holds a *temporary contract* (fixed-term contract, seasonal job, or replacement contract) and 1 if they hold a *permanent contract*. Worktime can take four values: 1 if the participant works *full-time*, 2 if *part-time 4/5*, 3 if *part-time 3/4*, and 4 if *part-time 1/2*

* $p < .05$. ** $p < .01$. *** $p < .001$

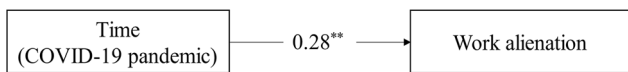


Fig. 2 Unstandardized Coefficients for the Model of Study 1. *Note.* $N=196$. Each variable is constructed by first differencing its respective score at T2 and T1. ** $p < 0.01$

(8 min at T1 and 10 min at T2) in exchange of a monetary compensation (£1.09 at T1 and £2 at T2). To be eligible, participants had to meet the same criteria as in Study 1, and we also took care to exclude the participants who had already completed the surveys of Study 1. Participants were once again guaranteed that their responses would be anonymous and kept confidential.

In total, 500 participants fully completed the questionnaire at T1 but 21 of them were excluded from the analyses as they did not answer at least one attentional check question correctly. Thus, the final sample at T1 was composed of 479 participants. Of these 479 participants, 387 completed the questionnaire at T2 (response rate = 77.87%). Participants who changed organization between T1 and T2 ($N=9$) or who did not answer at least one attentional check question correctly ($N=21$) were excluded from the analyses. As for Study 1, we also excluded the participants who did not work at T2 ($N=62$). Specifically, 59 respondents had their job suspended due to the COVID-19 pandemic (e.g., temporary unemployment, furloughed, or unpaid leave), one respondent quit their job for a reason unrelated to the COVID-19 pandemic, and two respondents had been dismissed (one

for a reason related to the COVID-19 pandemic and one for a reason unrelated to the COVID-19 pandemic). Thus, the final sample of Study 2 was composed of 295 working employees.

Of these participants, 216 (73.5%) fully worked on site while 78 (26.5%) worked from home at least one day a week at T1 (one participant did not provide an answer for T1). At T2, 57 (19.8%) worked on site while 231 (80.2%) worked from home at T2 (seven participants did not provide an answer for T1). As for Study 1, respondents were primarily British ($N=202$; 68.5%) although participants coming from the U.S. ($N=75$; 25.4%), Canada ($N=11$; 3.7%), Ireland ($N=6$; 2%) and Germany ($N=1$; 0.34%) also participated in the study. Here again, all these countries were facing the first wave of the COVID-19 pandemic and implemented nationwide lockdowns when the data at T2 were collected. About half of the respondents were women ($N=158$; 53.6%). Participants were on average 39.55 years old ($SD=10.75$) and had been working in their organization for 8.57 years ($SD=6.84$). In addition, the majority of the participants held a bachelor’s degree ($N=139$; 47.1%), worked in organizations with 1000 to 4999 employees ($N=68$; 23.1%), and worked full-time ($N=247$; 83.7%). Lastly, most participants worked in the private sector ($N=174$; 59%) and primarily in health and social care ($N=37$; 12.5%), teaching and education ($N=36$; 12.2%), public administration ($N=34$; 11.5%), accountancy, banking, and finance ($N=34$; 11.5%), and IT and information services ($N=31$; 10.5%).

Measures

As for Study 1, the items at T2 were preceded by the instruction “Since the start of the COVID-19 lockdown period...”. Unless otherwise noted, all items were assessed using a 7-point Likert agreement scale.

Work alienation was assessed with the same scale as the one used in Study 1.

Professional isolation was measured using the Golden et al.’s (2008) 7-item scale (e.g., “I miss face-to-face contact with coworkers”). Participants indicated their responses on a Likert scale ranging from 1 (*never*) to 7 (*always*).

Meaningfulness of work was assessed with the four-item scale of Kristensen et al., (2005; e.g., “My work is meaningful”). Participants indicated their responses on a Likert scale ranging from 1 (*to a very small extent*) to 5 (*to a very large extent*).

Job satisfaction was assessed with the four items from Eisenberger et al. (1997; e.g., “All in all, I’m very satisfied with my current job”).

Affective commitment was measured with the six items from Meyer et al., (1993; e.g., “This organization has a great deal of personal meaning for me”).

Turnover intentions were measured with Jaros’ (1997) three-item scale (1997; e.g., “I often think about quitting this organization”).

Control variables As for Study 1, the set of control variables included work mode, organizational size, type of contract, and worktime. Because the interpretation of the findings remained similar, we report below parsimonious results (Becker, 2005) and provide the estimates with control variables in online supplements (Fig. S2 and Table S3).

Results

Factor Analyses

The EFA at T1 extracted five factors. As the first item of affective commitment (i.e., “I would be very happy to spend the rest of my career with this organization”), the four items of job satisfaction, and the three items of turnover intentions loaded on a single factor, a second EFA imposing a six-factor solution was performed. The results indicated that the first item of affective commitment loaded poorly on its factor (0.28) and cross-loaded on the turnover intentions factor (0.48). This may be explained by the fact that

this item does not capture an “affective or emotional attachment to the organization” (Allen & Meyer, 1990, p. 2) but rather a cognitive intent to quit or stay in the organization. This item was therefore removed from the analyses and a third EFA without this item was performed. This six-factor imposed solution accounted for 79.13% of the total variance and all loadings were greater than 0.49. The EFA at T2 showed a similar pattern of results: after removing the first affective commitment item (i.e., “I would be very happy to spend the rest of my career with this organization”) that also loaded poorly on its respective factor (0.24) and cross-loaded on the turnover intentions factor (0.56), we imposed a six-factor structure that accounted for 77.48% of the total variance and where all loadings were greater than 0.46. CFAs without the first item of affective commitment were then performed to replicate this six-factor structure. Results showed an acceptable fit with the data (T1: $\chi^2(419) = 882.315$; RMSEA = 0.061; SRMR = 0.049; CFI = 0.935; TLI = 0.928 and T2: $\chi^2(419) = 1044.799$; RMSEA = 0.071; SRMR = 0.092; CFI = 0.913; TLI = 0.903) and all loadings were greater than 0.73 at T1 and 0.55 at T2. In line with these results, all subsequent analyses were performed without the first item of affective commitment⁷.

Relationships Among Variables

Means, standard deviations, reliability coefficients, and correlations between the variables are displayed in Table 1. Table S4 (online supplements) provides the means of each variable at each time period.

Unobserved Effects Panel Data Model

The results first supported Hypothesis 1 by showing that employees felt more alienated from their work during the COVID-19 pandemic than before it ($b = 0.19, p = 0.021$). The results then showed that employees reported higher levels of professional isolation ($b = 1.15, p < 0.001$) and lower levels of meaningfulness of work ($b = -0.15, p = 0.001$) during the COVID-19 pandemic. In turn, professional isolation increased work alienation ($b = 0.23, p < 0.001$) while meaningfulness of work decreased work alienation ($b = -0.58, p < 0.001$), controlling for the direct effects of the COVID-19 time dummy variable. Bootstrap analyses indicated that both specific indirect effects were significant and positive, meaning that employees felt more alienated from their work during the COVID-19 pandemic due to an increase in professional isolation (specific indirect effect = 0.28; $P 95\% CI = [0.18; 0.39]$) and a decrease in meaningfulness

⁷ The within-person and between-person variances are provided in Table S1 (online supplements).

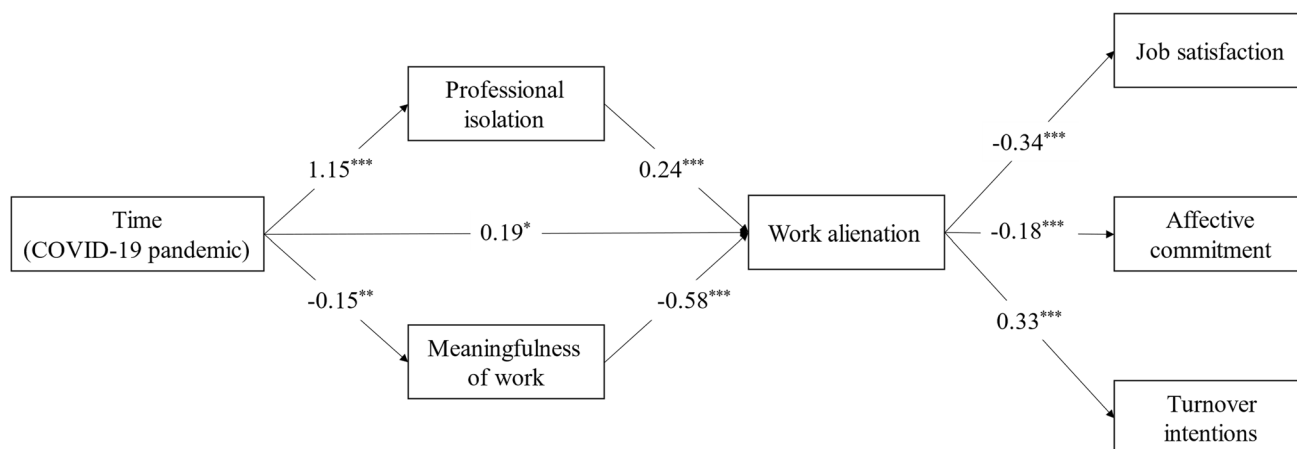


Fig. 3 Unstandardized Coefficients for the Model of Study 2. Note. $N=295$. Each variable is constructed by first differencing its respective score at T2 and T1. * $p < 0.05$. ** $p < 0.01$. *** $p < 0.001$

of work (specific indirect effect = 0.09; P 95% CI = [0.04; 0.15]). These results supported Hypotheses 2 and 3.

Regarding the consequences of work alienation, the findings showed that work alienation decreased job satisfaction ($b = -0.34$, $p < 0.001$) and affective commitment ($b = -0.18$, $p < 0.001$) and increased turnover intentions ($b = 0.33$, $p < 0.001$), controlling for the direct effects of the COVID-19 time dummy variable, professional isolation, and meaningfulness of work. These results provided support for Hypotheses 4a, 4b, and 4c. Figure 3 illustrates the results. Bootstrap analyses furthermore indicated that all total indirect effects (i.e., the effects of the COVID-19 time dummy variable on the outcomes through professional isolation and meaningfulness of work serially linked to work alienation) were significant (Table S5 in online supplements).

General Discussion

Across two longitudinal studies, the objective of the present research was to investigate (1) whether employees reported higher feeling of work alienation during the COVID-19 pandemic than before it, (2) whether this increase in work alienation may be explained by a greater professional isolation and a loss of meaningfulness of work during COVID-19 pandemic, and (3) how this increase in work alienation affected employees' job satisfaction, affective commitment, and turnover intentions during COVID-19.

First, the results of both studies indicated that employees were more alienated from their work during the COVID-19 pandemic than before it, certainly because it altered work conditions (Kniffin et al., 2021; Rudolph et al., 2020). These findings empirically support Guo et al.'s (2021) proposition that the work-related changes during the COVID-19 pandemic

would increase employees' feeling of work alienation. More generally, our research demonstrated that employees displayed more negative attitudes toward their work during the COVID-19 pandemic, thereby extending previous work that primarily focused on consequences related to occupational health and well-being (Bennett et al., 2021; Chong et al., 2020; Wanberg et al., 2020; Wang et al., 2021).

Second, and perhaps more importantly, Study 2 shed light on interpersonal and work-related factors explaining this increase in work alienation. More precisely, we focused on two historically well-known predictors of work alienation that have been suggested to have worsened during the COVID-19 pandemic, namely professional isolation and meaningfulness of work. On the one hand, the results showed that employees reported being more professionally isolated during the COVID-19 pandemic, which is consistent with previous work highlighting that isolation was a major challenge for employees during the COVID-19 pandemic (Kniffin et al., 2021; Rudolph et al., 2020; Wang et al., 2021). Indeed, as rules of physical distancing prevailed and digital platforms became the main channel of communication, employees experienced less possibilities for social interactions, hence increasing their feeling of being professionally isolated. In turn, this feeling of isolation was found to lead to a higher feeling of work alienation, which also supports previous studies suggesting that work alienation arises in response to social isolation and poor relationships (Conway et al., 2020; Korman et al., 1981; Nair & Vohra, 2010). On the other hand, the findings indicated that employees' perceptions of meaningfulness of work decreased during the COVID-19 pandemic. Indeed, as it introduced unpredictability and uncertainty (Chong et al., 2020; Kniffin et al., 2021; Rudolph et al., 2020; Yoon et al., 2021), made work responsibilities and goals unclear (Kuntz, 2021; Venkatesh et al., 2021; Wang et al., 2021), and acted

as a mortality cue triggering death reflection (Zhong et al., 2021), employees' sense of coherence, purpose significance has been challenged, thus resulting in lessened perceptions of work meaningfulness (Martela & Steger, 2016). In turn, meaningfulness of work was found to decrease work alienation, consistent with previous empirical work (Chiaburu et al., 2014; Mottaz, 1981; Nair & Vohra, 2010; Shantz et al., 2014). Overall, the results indicated that employees were more alienated from their work during the COVID-19 pandemic than before it because of an increase in professional isolation and a decrease in meaningfulness of work. This finding is consistent with Kanungo (1979) and Mottaz's (1981) initial observation that work alienation depends on one's work conditions. Finally, our research confirmed the negative nature of work alienation (Chiaburu et al., 2014; Conway et al., 2020; Guo et al., 2021; Shantz et al., 2014) as it was shown to decrease employees' job satisfaction and affective commitment, and to increase employees' turnover intentions.

Importantly, all the above-mentioned results were obtained using longitudinal data. Specifically, we observed the same individuals once before the outbreak of the COVID-19 pandemic and once during the first wave of the COVID-19 pandemic (i.e., repeated measures). This specific timing of the data collection made it possible to capture the COVID-19 pandemic and to examine how work alienation, its predictors, and its consequences evolved during the pandemic. In addition, by implementing an unobserved effects panel data model, we controlled for the effects of any time-invariant person-level factors (observable or not) that may have had biased the results if not accounted for (Antonakis et al., 2010; Wooldridge, 2010). For instance, such factors may include personality variables (e.g., locus of control), as they have been shown to be associated with work alienation, its predictors, and outcomes (Chiaburu et al., 2014; Judge & Bono, 2001; Mulki & Lassk, 2019). We also provided analyses that controlled for multiple relevant time-varying factors and the estimates remained similar. This bolsters our confidence in the robustness of the results. In addition, our results were observed among employees who came from different organizations and sectors and who differed in their work mode (i.e., working on site or from home).

Finally, by longitudinally investigating the predictors and consequences of work alienation, this research responds to the call of several scholars (Conway et al., 2020; Shantz et al., 2014, 2015) who emphasized the need to go beyond cross-sectional designs when examining work alienation. Indeed, to date, there exist only a very small number of longitudinal studies on work alienation and none focused on the predictors or the consequences examined in this research. Overall, in developing an integrative model of work alienation during the COVID-19 pandemic, we follow Shantz

et al.'s (2014, 2015) effort to revive the concept of work alienation.

Limitations and Future Research

Despite its strengths, this research presents several limitations that must be acknowledged. First, we relied solely on self-reported measures, so the results may have been affected by common method variance and social desirability. Several precautions were nonetheless taken to reduce these biases, such as guaranteeing participants the anonymity and confidentiality of their responses, pointing out that there were no right or wrong answers, and using validated scales (Podsakoff et al., 2003). It would however be worthwhile to replicate our results by using more objective measures (e.g., actual turnover rather than turnover intentions).

Second, future studies could benefit from a research design with three or more waves. On the one hand, such a design would yield more precise information on the relations among the studied variables (MacKinnon, 2012). On the other hand, having more than two waves would allow the lags of the variables to be used as an instrumental variable to address the endogeneity that can arise due to time-varying regressors (Cameron & Trivedi, 2010).

Third, the occurrence of the COVID-19 pandemic was modelled by the inclusion of a time dummy variable equal to *zero* before the pandemic and to *one* during the first wave of the pandemic. However, this does not allow us to disentangle which aspects of the COVID-19 pandemic were actually captured by our time dummy variable, especially since countries may have handled the first wave differently. Future research could thus measure specific aspects of the pandemic, such as lockdowns, social distancing or anxiety, in order to better understand what drove this increase in work alienation and its deleterious consequences.

Fourth, because the data were collected before and during the first wave the COVID-19 pandemic, our results only pertain to the short-term effects of the pandemic. Further investigation is thus needed to understand the long-term implications for employees' feeling of work alienation.

Lastly, future research could expand our results by adopting a more holistic approach. Indeed, given that the COVID-19 pandemic blurred the work-home boundaries (Kniffin et al., 2021; Rudolph et al., 2020), an interesting avenue would be to investigate the cross-domain predictors of work alienation. For instance, many employees reported greater difficulties balancing work and family responsibilities (Rudolph et al., 2020), which can eventually create a feeling work alienation (Fedi et al., 2016). Future studies could also examine the "side effects" of work alienation, such as employee drinking behaviors (Chiaburu et al., 2014). This would be particularly relevant given that alcohol

consumption increased significantly during the COVID-19 pandemic (Pollard et al., 2020).

Practical Implications

Even though our research was conducted during a rather singular event, that is the first wave of the COVID-19 pandemic, it nonetheless carries important practical implications for managers. Indeed, in addition to new COVID-19 waves triggered by variants (World Health Organization, 2021), other pandemics are expected to occur more often in the future (World Economic Forum, 2019). As our research shows, such large-scale crises can lead to isolation and reduced perceptions of meaningfulness of work, and thus alienate employees from their work. To avoid these adverse consequences, managers should first seek to promote social contacts. From a practical standpoint, this could be achieved by setting up frequent formal (e.g., morning briefings) and informal (e.g., coffee breaks) videoconference meetings that will give employees opportunities to socialize and maintain social ties and team spirit (Rudolph et al., 2020). Similarly, frequent, clear, and transparent communications, especially on how the pandemic has impacted the organization's plans and priorities, should be provided. Research indeed shows that it may alleviate employees' feeling of isolation as it fulfils their belongingness need (Andel et al., 2021).

Second, managers should strive to help employees find meaning in their work. Kapoor and Kaufman (2020) proposed that creativity may facilitate meaning-making during the COVID-19 pandemic as it allows to find coherence, purpose, and significance in one's work (see also Kaufman, 2018). Managers may thus implement creativity training courses (Birdi, 2007) or introduce programs that promote creativity (e.g., cross-disciplines education opportunities or incorporating employees' artwork into office decorations; Eschleman et al., 2014). In their intervention study, Cantarero et al. (2021) showed that inviting employees to write down how their work benefits to others is another efficient way to foster perceptions of work meaningfulness. Therefore, managers may consider promoting such writing tasks which can be easily implemented remotely.

Conclusion

The results of the present research indicated that employees experienced higher levels of work alienation during the COVID-19 pandemic than before it due to an increase in professional isolation and a decrease in meaningfulness of work. In turn, this increase in work alienation was found to negatively affect employees' job satisfaction, affective commitment, and turnover intentions.

Supplementary Information The online version contains supplementary material available at <https://doi.org/10.1007/s12144-022-03372-9>.

Authors' contributions Constantin Lagios (Data curation; Conceptualization; Formal analyses; Writing – original draft); Nicolas Lagios (Data curation; Formal analyses; Writing – original draft); Florence Stinglhamer (Conceptualization; Project administration; Supervision; Writing – original draft); Gaëtane Caesens (Conceptualization; Funding acquisition; Project administration; Supervision; Writing – original draft).

Funding This study was funded by the "Fonds Spéciaux de la Recherche" of the Université catholique de Louvain.

Data availability The data that support the findings of this study are available from the corresponding author upon reasonable request.

Code availability Not applicable.

Declarations

Conflicts of interest/Competing interests On behalf of all authors, the corresponding author states that there is no conflict of interest.

Ethics approval All procedures performed in studies involving human participants were in accordance with the ethical standards of the institutional and/or national research committee and with the 1964 Helsinki declaration and its later amendments or comparable ethical standards.

Consent to participate Informed consent was obtained from all individual participants included in the study.

Consent for publication Not applicable.

References

- Allan, B. A., Dexter, C., Kinsey, R., & Parker, S. (2018). Meaningful work and mental health: Job satisfaction as a moderator. *Journal of Mental Health, 27*(1), 38–44. <https://doi.org/10.1080/09638237.2016.1244718>
- Allen, N. J., & Meyer, J. P. (1990). The measurement and antecedents of affective, continuance and normative commitment to the organization. *Journal of Occupational Psychology, 63*(1), 1–18. <https://doi.org/10.1111/j.2044-8325.1990.tb00506.x>
- Amarat, M., Akbolat, M., Ünal, Ö., & GüneşKarakaya, B. (2019). The mediating role of work alienation in the effect of workplace loneliness on nurses' performance. *Journal of Nursing Management, 27*(3), 553–559. <https://doi.org/10.1111/jonm.12710>
- Andel, S. A., Shen, W., & Arvan, M. L. (2021). Depending on your own kindness: The moderating role of self-compassion on the within-person consequences of work loneliness during the COVID-19 pandemic. *Journal of Occupational Health Psychology, 26*(4), 276–290. <https://doi.org/10.1037/ocp0000271>
- Antonakis, J., Bendahan, S., Jacquart, P., & Lalive, R. (2010). On making causal claims: A review and recommendations. *The Leadership Quarterly, 21*(6), 1086–1120. <https://doi.org/10.1016/j.leaqua.2010.10.010>
- Baert, S., Lippens, L., Moens, E., Weytjens, J., & Sterkens, P. (2020). The COVID-19 crisis and telework: A Research survey on experiences, expectations and hopes. IZA discussion paper no. 13229. Available online at <https://ssrn.com/abstract=3596696>

- Bailey, C., & Madden, A. (2016). What makes work meaningful – Or meaningless. *MIT Sloan Management Review*, 57(4), 1–9.
- Becker, T. E. (2005). Potential problems in the statistical control of variables in organizational research: A qualitative analysis with recommendations. *Organizational Research Methods*, 8(3), 274–289. <https://doi.org/10.1177/1094428105278021>
- Bennett, A. A., Campion, E. D., Keeler, K. R., & Keener, S. K. (2021). Videoconference fatigue? Exploring changes in fatigue after videoconference meetings during COVID-19. *Journal of Applied Psychology*, 106(3), 330–344. <https://doi.org/10.1037/apl0000906>
- Birdi, K. (2007). A lighthouse in the desert? Evaluating the effects of creativity training on employee innovation. *The Journal of Creative Behavior*, 41(4), 249–270. <https://doi.org/10.1002/j.2162-6057.2007.tb01073.x>
- Bourdin, S., Jeanne, L., Nadou, F., & Noiret, G. (2021). Does lockdown work? A spatial analysis of the spread and concentration of Covid-19 in Italy. *Regional Studies*, 55(7), 1182–1193. <https://doi.org/10.1080/00343404.2021.1887471>
- Cameron, A. C., & Trivedi, P. K. (2010). *Microeconometrics using Stata* (Vol. 2). Stata Press.
- Cantarero, K., van Tilburg, W. A. P., & Smoktunowicz, E. (2021). Other- (vs. self-) oriented meaning interventions enhance momentary work engagement through changes in work meaningfulness. *Journal of Counseling Psychology*. Advance online publication. <https://doi.org/10.1037/cou0000594>
- Charalampous, M., Grant, C. A., Tramontano, C., & Michailidis, E. (2019). Systematically reviewing remote e-workers' well-being at work: A multidimensional approach. *European Journal of Work and Organizational Psychology*, 28(1), 51–73. <https://doi.org/10.1080/1359432X.2018.1541886>
- Chiaburu, D. S., Thundiyil, T., & Wang, J. (2014). Alienation and its correlates: A meta-analysis. *European Management Journal*, 32(1), 24–36. <https://doi.org/10.1016/j.emj.2013.06.003>
- Chong, S., Huang, Y., Chang, C.-H., & (D.). (2020). Supporting interdependent telework employees: A moderated-mediation model linking daily COVID-19 task setbacks to next-day work withdrawal. *Journal of Applied Psychology*, 105(12), 1408–1422. <https://doi.org/10.1037/apl0000843>
- Conway, E., Monks, K., Fu, N., Alfes, K., & Bailey, K. (2020). Reimagining alienation within a relational framework: Evidence from the public sector in Ireland and the UK. *The International Journal of Human Resource Management*, 31(21), 2673–2694. <https://doi.org/10.1080/09585192.2018.1460859>
- Costa, L. D. C. M., Maher, C. G., McAuley, J. H., Hancock, M. J., & Smeets, R. J. (2011). Self-efficacy is more important than fear of movement in mediating the relationship between pain and disability in chronic low back pain. *European Journal of Pain*, 15(2), 213–219. <https://doi.org/10.1016/j.ejpain.2010.06.014>
- Costello, A. B., & Osborne, J. (2005). Best practices in exploratory factor analysis: Four recommendations for getting the most from your analysis. *Practical Assessment, Research, and Evaluation*, 10(7), 1–9. <https://doi.org/10.7275/jyj1-4868>
- Dalal, R. S. (2012). Job attitudes: Cognition and affect. Industrial and organizational psychology In I. B. Weiner, N. Schmitt, & S. Highhouse (Eds.), *Handbook of psychology* (Vol. 12, pp. 341–366). John Wiley.
- Eisenberger, R., Cummings, J., Armeli, S., & Lynch, P. (1997). Perceived organizational support, discretionary treatment, and job satisfaction. *Journal of Applied Psychology*, 82(5), 812–820. <https://doi.org/10.1037/0021-9010.82.5.812>
- Eschleman, K. J., Madsen, J., Alarcon, G., & Barelka, A. (2014). Benefiting from creative activity: The positive relationships between creative activity, recovery experiences, and performance-related outcomes. *Journal of Occupational and Organizational Psychology*, 87(3), 579–598. <https://doi.org/10.1111/joop.12064>
- Fedi, A., Pucci, L., Tartaglia, S., & Rollero, C. (2016). Correlates of work-alienation and positive job attitudes in high- and low-status workers. *Career Development International*, 21(7), 713–725. <https://doi.org/10.1108/CDI-03-2016-0027>
- Fernandes, N. (2020). Economic effects of coronavirus outbreak (COVID-19) on the world economy. Available at SSRN 3557504.
- Golden, T. D., Veiga, J. F., & Dino, R. N. (2008). The impact of professional isolation on teleworker job performance and turnover intentions: Does time spent teleworking, interacting face-to-face, or having access to communication-enhancing technology matter? *Journal of Applied Psychology*, 93(6), 1412–1421. <https://doi.org/10.1037/a0012722>
- Goodman, J. S., & Blum, T. C. (1996). Assessing the non-random sampling effects of subject attrition in longitudinal research. *Journal of Management*, 22(4), 627–652. <https://doi.org/10.1177/014920639602200405>
- Grant, A. M., & Wade-Benzoni, K. A. (2009). The hot and cool of death awareness at work: Mortality cues, aging, and self-protective and prosocial motivations. *Academy of Management Review*, 34(4), 600–622. <https://doi.org/10.5465/amr.34.4.zok600>
- Groarke, J. M., Berry, E., Graham-Wisener, L., McKenna-Plumley, P. E., McGlinchey, E., & Armour, C. (2020). Loneliness in the UK during the COVID-19 pandemic: Cross-sectional results from the COVID-19 Psychological Wellbeing Study. *PLoS ONE*, 15(9), e0239698. <https://doi.org/10.1371/journal.pone.0239698>
- Guo, L., Cheng, K., Luo, J., & Zhao, H. (2021). Trapped in a loss spiral: How and when work alienation relates to knowledge hiding. *The International Journal of Human Resource Management*. Advance online publication. <https://doi.org/10.1080/09585192.2021.1937672>
- Herby, J., Jonung, L., & Hanke, S. (2022). *A Literature Review and Meta-Analysis of the Effects of Lockdowns on Covid-19 Mortality*. Studies in Applied Economic Series 200. Johns Hopkins University.
- Hanisch, K. A., & Hulin, C. L. (1990). Job attitudes and organizational withdrawal: An examination of retirement and other voluntary withdrawal behaviors. *Journal of Vocational Behavior*, 37(1), 60–78. [https://doi.org/10.1016/0001-8791\(90\)90007-O](https://doi.org/10.1016/0001-8791(90)90007-O)
- Harrison, D. A., Newman, D. A., & Roth, P. L. (2006). How important are job attitudes? Meta-analytic comparisons of integrative behavioral outcomes and time sequences. *Academy of Management Journal*, 49(2), 305–325. <https://doi.org/10.5465/amj.2006.20786077>
- He, H., & Harris, L. (2020). The impact of Covid-19 pandemic on corporate social responsibility and marketing philosophy. *Journal of Business Research*, 116, 176–182. <https://doi.org/10.1016/j.jbusres.2020.05.030>
- Hegel, G.W.F. (1977). *Phenomenology of spirit*. Clarendon Press. (Original work published 1844).
- Hennekam, S., Ladge, J. J., & Powell, G. N. (2021). Confinement during the COVID-19 pandemic: How multi-domain work-life shock events may result in positive identity change. *Journal of Vocational Behavior*, 130, 103621. <https://doi.org/10.1016/j.jvb.2021.103621>
- Hirschfeld, R. R., & Feild, H. S. (2000). Work centrality and work alienation: Distinct aspects of a general commitment to work. *Journal of Organizational Behavior*, 21(7), 789–800. [https://doi.org/10.1002/1099-1379\(200011\)21:7%3c789::AID-JOB59%3e3.0.CO;2-W](https://doi.org/10.1002/1099-1379(200011)21:7%3c789::AID-JOB59%3e3.0.CO;2-W)
- Jaros, S.J. (1997). An Assessment of Meyer and Allen's (1991). Three-component model of organizational commitment and turnover intentions. *Journal of Vocational Behavior*, 51(3), 319–337. <https://doi.org/10.1006/jvbe.1995.1553>
- Judge, T. A., & Bono, J. E. (2001). Relationship of core self-evaluations traits – self-esteem, generalized self-efficacy, locus of control, and emotional stability – with job satisfaction and job performance: A meta-analysis. *Journal of Applied Psychology*, 86, 80–92.

- Judge, T. A., & Kammeyer-Mueller, J. D. (2012). Job attitudes. *Annual Review of Psychology*, 63, 341–367. <https://doi.org/10.1146/annurev-psych-120710-100511>
- Kanungo, R. N. (1979). The concepts of alienation and involvement revisited. *Psychological Bulletin*, 86(1), 119–138. <https://doi.org/10.1037/0033-2909.86.1.119>
- Kapoor, H., & Kaufman, J. C. (2020). Meaning-making through creativity during COVID-19. *Frontiers in Psychology*, 11, 3659. <https://doi.org/10.3389/fpsyg.2020.595990>
- Kaufman, J. C. (2018). Finding meaning with creativity in the past, present, and future. *Perspectives on Psychological Science*, 13(6), 734–749. <https://doi.org/10.1177/1745691618771981>
- Vugt, M. V. (2021). COVID-19 and the workplace: Implications, issues, and insights for future research and action. *American Psychologist*, 76(1), 63–77. <https://doi.org/10.1037/amp0000716>
- Korman, A. K., Wittig-Berman, U., & Lang, D. (1981). Career success and personal failure: Alienation in professionals and managers. *Academy of Management Journal*, 24(2), 342–360. <https://doi.org/10.5465/255846>
- Kramer, A., & Kramer, K. Z. (2020). The potential impact of the Covid-19 pandemic on occupational status, work from home, and occupational mobility. *Journal of Vocational Behavior*, 119. <https://doi.org/10.1016/j.jvb.2020.103442>
- Kristensen, T. S., Hannerz, H., Høgh, A., & Borg, V. (2005). The Copenhagen Psychosocial Questionnaire—a tool for the assessment and improvement of the psychosocial work environment. *Scandinavian Journal of Work, Environment & Health*, 31(6), 438–449.
- Kulikowski, K., Przytuła, S., & Sułkowski, Ł. (2021). E-learning? Never again! On the unintended consequences of COVID-19 forced e-learning on academic teacher motivational job characteristics. *Higher Education Quarterly*, 1–16. <https://doi.org/10.1111/hequ.12314>
- Kuntz, J. C. (2021). Resilience in times of global pandemic: Steering recovery and thriving trajectories. *Applied Psychology: An International Review*, 70(1), 188–215. <https://doi.org/10.1111/apps.12296>
- Lepisto, D. A., & Pratt, M. G. (2017). Meaningful work as realization and justification: Toward a dual conceptualization. *Organizational Psychology Review*, 7(2), 99–121. <https://doi.org/10.1177/2041386616630039>
- Lau, H., Khosrawipour, V., Kocbach, P., Mikolajczyk, A., Schubert, J., Bania, J., & Khosrawipour, T. (2020). The positive impact of lockdown in Wuhan on containing the COVID-19 outbreak in China. *Journal of Travel Medicine*, 27(3), 1–7. <https://doi.org/10.1093/jtm/taaa037>
- Lin, W., Shao, Y., Li, G., Guo, Y., & Zhan, X. (2021). The psychological implications of COVID-19 on employee job insecurity and its consequences: The mitigating role of organization adaptive practices. *Journal of Applied Psychology*, 106(3), 317–329. <https://doi.org/10.1037/apl0000896>
- Lysova, E. I., Allan, B. A., Dik, B. J., Duffy, R. D., & Steger, M. F. (2019). Fostering meaningful work in organizations: A multi-level review and integration. *Journal of Vocational Behavior*, 110, 374–389. <https://doi.org/10.1016/j.jvb.2018.07.004>
- MacKinnon, D. P. (2012). *Introduction to statistical mediation analysis*. Routledge.
- Martela, F., & Steger, M. F. (2016). The three meanings of meaning in life: Distinguishing coherence, purpose, and significance. *The Journal of Positive Psychology*, 11(5), 531–545. <https://doi.org/10.1080/17439760.2015.1137623>
- Marx, K. (1969). *Alienated labour*. The Free Press. (Original work published 1844).
- Meyer, J. P., Allen, N. J., & Smith, C. A. (1993). Commitment to organizations and occupations: Extension and test of a three-component conceptualization. *Journal of Applied Psychology*, 78(4), 538–551. <https://doi.org/10.1037/0021-9010.78.4.538>
- Moris, D., & Schizas, D. (2020). Lockdown during COVID-19: The Greek success. *In Vivo*, 34(3), 1695–1699. <https://doi.org/10.21873/invivo.11963>
- Mottaz, C. J. (1981). Some determinants of work alienation. *Sociological Quarterly*, 22(4), 515–529. <https://doi.org/10.1111/j.1533-8525.1981.tb00678.x>
- Mulki, J., & Lassar, F. G. (2019). Joint impact of ethical climate and external work locus of control on job meaningfulness. *Journal of Business Research*, 99, 46–56. <https://doi.org/10.1016/j.jbusres.2019.02.007>
- Nair, N., & Vohra, N. (2009). Developing a new measure of work alienation. *Journal of Workplace Rights*, 14(3), 293–309. <https://doi.org/10.2190/WR.14.3.c>
- Nair, N., & Vohra, N. (2010). An exploration of factors predicting work alienation of knowledge workers. *Management Decision*, 48(4), 600–615. <https://doi.org/10.1108/00251741011041373>
- Nair, N., & Vohra, N. (2012). The concept of alienation: Towards conceptual clarity. *International Journal of Organizational Analysis*, 20(1), 25–50. <https://doi.org/10.1108/19348831211215641>
- Pearlin, L. I. (1962). Alienation from work: A study of nursing personnel. *American Sociological Review*, 27(3), 314–326. <https://doi.org/10.2307/2089793>
- Podsakoff, P. M., MacKenzie, S. B., Lee, J.-Y., & Podsakoff, N. P. (2003). Common method biases in behavioral research: A critical review of the literature and recommended remedies. *Journal of Applied Psychology*, 88(5), 879–903.
- Pollard, M. S., Tucker, J. S., & Green, H. D. (2020). Changes in Adult Alcohol Use and Consequences During the COVID-19 Pandemic in the US. *JAMA Network Open*, 3(9), e2022942. <https://doi.org/10.1001/jamanetworkopen.2020.22942>
- Restubog, S. L. D., Ocampo, A. C. G., & Wang, L. (2020). Taking control amidst the chaos: Emotion regulation during the COVID-19 pandemic. *Journal of Vocational Behavior*, 119, 103440. <https://doi.org/10.1016/j.jvb.2020.103440>
- Rudolph, C. W., Allan, B., Clarke, M., Hertel, G., Hirschi, A., Kunze, F., ... Zacher, H. (2020). Pandemics: Implications for research and practice in industrial and organizational psychology. *Industrial and Organizational Psychology: Perspectives on Science and Practice*. <https://doi.org/10.31234/osf.io/k8us2>
- Seeman, M. (1959). On the meaning of alienation. *American Sociological Review*, 24(6), 783–791. <https://doi.org/10.2307/2088565>
- Seeman, M. (1972). The signals of '68: Alienation in pre-crisis in France. *American Sociological Review*, 37(4), 385–402. <https://doi.org/10.2307/2093178>
- Shantz, A., Alfes, K., & Truss, C. (2014). Alienation from work: Marxist ideologies and twenty-first-century practice. *The International Journal of Human Resource Management*, 25(18), 2529–2550. <https://doi.org/10.1080/09585192.2012.667431>
- Shantz, A., Alfes, K., Bailey, C., & Soane, E. (2015). Drivers and outcomes of work alienation: Reviving a concept. *Journal of Management Inquiry*, 24(4), 382–393. <https://doi.org/10.1177/1056492615573325>
- Song, L., Wang, Y., Li, Z., Yang, Y., & Li, H. (2020). Mental health and work attitudes among people resuming work during the Covid-19 pandemic: A cross-sectional study in China. *International Journal of Environmental Research and Public Health*, 17(14). <https://doi.org/10.3390/ijerph17145059>
- Twining, J. E. (1980). Alienation as a social process. *The Sociological Quarterly*, 21(3), 417–428. <https://doi.org/10.1111/j.1533-8525.1980.tb00622.x>
- Venkatesh, V., Ganster, D. C., Schuetz, S. W., & Sykes, T. A. (2021). Risks and rewards of conscientiousness during the COVID-19

- pandemic. *Journal of Applied Psychology*, 106(5), 643–656. <https://doi.org/10.1037/apl0000919>
- Wanberg, C. R., Csillag, B., Douglass, R. P., Zhou, L., & Pollard, M. S. (2020). Socioeconomic status and well-being during COVID-19: A resource-based examination. *Journal of Applied Psychology*, 105(12), 1382–1396. <https://doi.org/10.1037/apl0000831>
- Wang, B., Liu, Y., Qian, J., & Parker, S. K. (2021). Achieving effective remote working during the COVID-19 pandemic: A work design perspective. *Applied Psychology: An International Review*, 70(1), 16–59. <https://doi.org/10.1111/apps.12290>
- Wegner, E. L. (1975). The concept of alienation: A critique and some suggestions for a context specific approach. *Pacific Sociological Review*, 18(2), 171–193. <https://doi.org/10.2307/1388631>
- Wood, B. M., Nicholas, M. K., Blyth, F., Asghari, A., & Gibson, S. (2016). The mediating role of catastrophizing in the relationship between pain intensity and depressed mood in older adults with persistent pain: A longitudinal analysis. *Scandinavian Journal of Pain*, 11(1), 157–162. <https://doi.org/10.1016/j.sjpain.2015.12.009>
- Wooldridge, J. M. (2010). *Econometric analysis of cross section and panel data*. MIT Press.
- World Health Organization. (2020). Listings of WHO's response to COVID-19. <https://www.who.int/news/item/29-06-2020-covid-timeline>
- World Health Organization. (2021). Tracking SARS-CoV-2 variants. <https://www.who.int/en/activities/tracking-SARS-CoV-2-variants/>
- World Economic Forum. (2019). *Outbreak readiness and business impact: Protecting lives and livelihoods across the global economy*. Retrieved from http://www3.weforum.org/docs/WEF_HGHI_Outbreak_Readiness_Business_Impact.pdf
- Yoon, S., McClean, S. T., Chawla, N., Kim, J. K., Koopman, J., Rosen, C. C., Trougakos, J. P., & McCarthy, J. M. (2021). Working through an “infodemic”: The impact of COVID-19 news consumption on employee uncertainty and work behaviors. *Journal of Applied Psychology*, 106(4), 501–517. <https://doi.org/10.1037/apl0000913>
- Zhong, R., Paluch, R. M., Shum, V., Zatzick, C. D., & Robinson, S. L. (2021). Hot, cold, or both? A person-centered perspective on death awareness during the COVID-19 pandemic. *Journal of Applied Psychology*, 106(6), 839–855. <https://doi.org/10.1037/apl0000931>

Publisher's Note Springer Nature remains neutral with regard to jurisdictional claims in published maps and institutional affiliations.