Short- and Long-Term Impacts of the Covid-19 Pandemic on Perceptions of Job Insecurity in Switzerland: The Role of Short-Time Work and Work-From-Home

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Abstract: This study investigates the short- and long-term impact of Switzerland's initial economic shutdown due to the Covid-19 pandemic on the perception of job insecurity. According to the Swiss Household Panel (SHP) data, perceived job insecurity increased from 2019 to 2020, before declining in subsequent years. Employees on short-time work perceived the most significant initial increase, but reported the greatest subsequent decrease. In the private sector, working fully from home was found to have a protective effect on perceived job insecurity.

Keywords: Job insecurity, Covid-19 pandemic, work from home, remote work, short-time work

Impact à court et à long terme de la pandémie de Covid-19 sur la perception de l'insécurité de l'emploi en Suisse : le rôle du chômage partiel et du télétravail

Résumé : Cette étude examine les effets à court et à long terme du premier semi-confinement en Suisse, lié à la pandémie de Covid-19, sur la perception de l'insécurité de l'emploi. Selon le Panel suisse de ménages (PSM), celle-ci a augmenté entre 2019 et 2020, puis a diminué les années suivantes. Les personnes au chômage partiel ont perçu la plus forte hausse initiale, mais également la baisse subséquente la plus marquée. Pour les employé·e·s du secteur privé, pouvoir travailler entièrement depuis la maison a eu un effet protecteur.

Mots-clés : Insécurité de l'emploi, pandémie de Covid-19, télétravail, travail à domicile, chômage partiel

Kurz- und langfristige Auswirkungen der Covid-19-Pandemie auf die Wahrnehmung von Arbeitsplatzunsicherheit in der Schweiz: die Rolle von Kurzarbeit und Arbeit im Homeoffice

Zusammenfassung: Diese Studie untersucht die kurz- und langfristigen Auswirkungen des ersten wirtschaftlichen Shutdowns in der Schweiz infolge der Covid-19-Pandemie auf die wahrgenommene Arbeitsplatzunsicherheit. Gemäss den Daten des Schweizer Haushalt-Panels (SHP) nahm diese von 2019 bis 2020 zu und ging in den Folgejahren wieder zurück. Personen in Kurzarbeit verzeichneten den stärksten anfänglichen Anstieg, jedoch auch den grössten anschliessenden Rückgang. Für Angestellte im privaten Sektor hatte vollständiges Arbeiten im Homeoffice einen schützenden Effekt.

Schlüsselwörter: Arbeitsplatzunsicherheit, Covid-19-Pandemie, Homeoffice, Heimarbeit, Kurzarbeit

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1 Introduction[1,2]

In March 2020, the World Health Organization (WHO) declared the Covid-19 pandemic, and governments around the world shut down large parts of their economies to contain the spread of the new virus. To buffer the economic shock, many governments established new safety nets or developed existing ones, for example by expanding unemployment protection or introducing wage subsidy schemes (Moreira & Hick, 2021). Moreover, workers were urged to work from home wherever possible (Heidelberger & Schneuwly, 2023).

During the Covid-19 pandemic, Switzerland experienced three phases of partial economic shutdown[3] and the population was urged to stay at home. Work-from-home was imposed in spring 2020 and again in the winters of 2020/2021 and 2021/2022 (Heidelberger & Schneuwly, 2023). The Swiss government adopted several measures to stabilise its economy in the meanwhile, and by April 2022, most of the employment support measures were cancelled (Wegmüller & Kemeny, 2023). Short-time working compensation (known as "furlough" in some countries) was one of the most important instruments: To prevent redundancies, some workers had to reduce or completely stop work temporarily as a direct consequence of the pandemic, receiving 80% of their pay for up to 24 months in compensation (SECO, 2022). This turned out to be an effective measure to protect jobs in Switzerland, as no artificial delay in dismissal was observed (Wagenbach, 2021). In April 2020, about 25% of all employees in Switzerland received some short-time working compensation (Wagenbach, 2021) and up to half of the working population was working from home during the first economic shutdown (Refle et al., 2020). It is therefore important to pay attention to these conditions when analysing the effects of the pandemic.

Fortunately, after a sharp decline in 2020, gross domestic product recovered quickly (Wagenbach, 2021; Wegmüller & Kemeny, 2023) and the Swiss economy fared relatively well during the crisis overall.

However, despite the relatively quick recovery, the closure of some economic sectors and the indirect impact on others may have increased the general perception of job insecurity. It is important to understand this dynamic because research has shown that job insecurity has far-reaching negative consequences for workers' physical and mental health (Kim & von dem Knesebeck, 2016; Klug et al., 2020) and affects a wide range of work-related outcomes such as job satisfaction, trust

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3 This study uses the term "shutdown" instead of the often-used "lockdown" because the Swiss government never forced the population to stay at home, as was the case in other countries such as France or the UK (Hale et al., 2021).

in the organisation, absenteeism and turnover (Klug et al., 2020; Lee et al., 2018; Sverke et al., 2002). Moreover, previous studies have shown that the detrimental effects of perceived job insecurity increase if the adverse conditions persist (e. g., Burchell, 2011). Therefore, it is crucial to adopt a long-term perspective and analyse the evolution of perceived job insecurity throughout the pandemic.

Research has chiefly been carried out on short-term consequences, and focused mainly on specific professional groups such as tech workers (Di, 2021), behaviour analysts (Jimenez-Gomez et al., 2021), restaurant workers (Chen and Eyoun, 2021; Lippert et al., 2021) or hotel employees (Wong et al., 2021). We still lack knowledge, therefore, about the general working population over longer time horizons. The present study asks how the Covid-19 pandemic affected perceptions of job insecurity in Switzerland over the short- and long term, and how workers' experiences during the first economic shutdown influenced these perceptions. Specifically, it investigates whether working from home and short-time working during the first economic shutdown impacted the evolution of perceived job insecurity. The present study has two main advantages. First, using the Swiss Household Panel (SHP) study, data on pre-pandemic employment measures and perceived job insecurity can be used in addition to data from the onset (first economic shutdown) and later phases of the pandemic. Therefore, it is possible to focus on short-term changes in the perception of job insecurity between 2019 and 2020 and on the evolution of perceived job insecurity in later phases of the pandemic (2020–2021 and 2020–2022). Second, the SHP is based on random samples of the general population, providing an overall picture of the Swiss workforce.

The present study shows that following an increase between 2019 and 2020, perceived job insecurity decreased in the subsequent years. The perceptions of employees who worked short-time or partially from home were most affected. Fortunately, those who experienced the largest increases in perceived job insecurity in the early phase of the pandemic also tended to report the largest decreases in later phases.

2 Background and Hypotheses

The pandemic quickly took on unprecedented proportions, overwhelming most people in one way or another (Castiglioni & Gaj, 2020). The strain caused by the shutdown, such as changes in work and school, childcare at home and restrictions on personal freedom, significantly increased stress levels in the population (de Quervain et al., 2020). However, these observations are not conclusive. Some studies suggest that the pandemic led to a reduction in perceived stress, depending on the individual's context. The Job Stress Index (Gesundheitsförderung Schweiz, 2022) slightly improved after 2020 and health-related productivity losses somewhat decreased. Emotional exhaustion among men and older workers also decreased, as has work-related strain among men (Gesundheitsförderung Schweiz, 2022) and

work fatigue, especially for employees in short-time work (Rauvola et al., 2022). Moreover, employees who switched to remote work reported improvements in their work and private life (Tušl et al., 2021) and the general perception of stress decreased, particularly for people with high socio-economic resources (Kuhn et al., 2021). Accordingly, the pandemic was not only a burden on the population; it was also beneficial in some respects. Accordingly, concerns about employment are also likely to vary depending on individual circumstances. In what follows, I will first discuss the theoretical foundations of the present study: the concept of perceived job insecurity, event system theory and the resilience approach. Second, I will describe the state of research. In a third step, I will specifically consider the circumstances of employees in work-from-home and short-time work contexts.

2.1 Perception of Job Insecurity

Job insecurity is often defined as the "perceived powerlessness to maintain desired continuity in a threatened job situation" (Greenhalgh & Rosenblatt, 1984, p. 438). Although there may be objectively adverse circumstances, job insecurity is inherently subjective. Employees who face the same adverse circumstances can perceive considerably different levels of job insecurity (De Witte, 2005; Sverke et al., 2002). Job insecurity can be *cognitive* or *affective* (Huang et al., 2010) and it can concern both the threat of losing the job as a whole (*quantitative job insecurity*) and the threat of losing valued job features, without losing the job, which is also termed *qualitative job insecurity* (Greenhalgh & Rosenblatt, 1984). Cognitive job insecurity refers to the perceived risk of job loss or loss of valued job aspects. In contrast, affective job insecurity is an emotional reaction to cognitive job insecurity, manifesting as worries or fear (Huang et al., 2010). In the context of the pandemic, employees were likely more concerned about whether their jobs (more than valued job features) would resist the economic shock. Therefore, in what follows, job insecurity refers to the cognitive evaluation of the risk of job loss.

The perceived threat of job loss implies a threat to one's financial stability, which in turn causes stress and hinders active life planning (De Witte, 1999). Therefore, the perception of job insecurity has been shown to have far-reaching consequences on individuals' well-being (e.g. Kim & von dem Knesebeck, 2016; Klug et al., 2020).

In normal times, certain job characteristics – blue-collar jobs (Keim et al., 2014), temporary contracts (Keim et al., 2014; Lee et al., 2018) or private sector jobs (Shoss, 2017) – are more suggestive of perceived job insecurity. Additionally, perceived job insecurity increases with macro-economic factors such as high unemployment rates, shrinking employer demand or technological changes (Klug et al., 2020; Lee et al., 2018; Shoss, 2017).

The Covid-19 pandemic was an external shock that hit economies worldwide. Event system theory (Morgeson et al., 2015) helps describe its impact on employees and their perceptions of job insecurity. This theory focuses on events that break

routines and command our attention. The pandemic can be conceptualised as an event (Lin et al., 2021) whose strength varies from person to person, depending on the event's degree of novelty, disruption and criticality (Morgeson et al., 2015). *Event novelty* describes the degree to which an event differs from current or past events. Novel events are non-routine and unanticipated, and organisations are not usually prepared to face such events (Morgeson et al., 2015). *Event disruption* is the level of discontinuity induced by the event and the magnitude of the perceived threat provoked by the event. Routines and operations are disrupted and employees need to adapt to the event (Morgeson et al., 2015). *Event criticality* is the degree to which an event is perceived as "important, essential, or a priority" (Morgeson & DeRue, 2006, p. 273) and is somewhat oriented towards the future (Lin et al., 2021). Events of high criticality are perceived as a major threat to the individual's future success (Chen et al., 2021). The higher the event's degree of novelty, disruption and criticality, the more likely it is to change individuals' perceptions and behaviours (Lin et al., 2021). Accordingly, the more an employee experiences the pandemic as unexpected and new, disrupting his or her routines and hindering long-term work success, the more likely it is that the employee experienced changing perceptions of job insecurity. How and whether an employee was able to do their job presumably influenced this perception.

However, event system theory describes the changes due to the pandemic in a somewhat static way without considering individuals' adaptability and resilience. I therefore complement event system theory with the resilience approach, which accounts for individuals' adaptation to a non-routine event. Indeed, individuals can successfully adapt to adverse circumstances and gain a sense of resilience (Vella & Pai, 2019). Although there is no universal definition of resilience, most descriptions include the ability to bounce back and experience positive outcomes when exposed to adverse circumstances (Vella & Pai, 2019).

There is a debate about whether resilience is a *trait*, meaning that it depends on individual characteristics, a *capacity*, which depends on the resources an individual can draw upon, or a dynamic *process* resulting from the interaction of the individual and its context (Kossek & Perrigino, 2016). The process-oriented approach recognises that resilience has multiple causes and is not solely dependent on personal characteristics (Kossek & Perrigino, 2016; Vella & Pai, 2019). Rather, in the work context, it is based on both individual and organisational factors.

In this paper, employee resilience is understood as a process of individuals adapting to the pandemic's adverse circumstances. Whether an employee adapts well to the occupational requirements imposed by the containment measures depends on contextual factors such as the possibility of working from home, which is largely determined by the nature of the work. There are jobs, for example in construction or production, that simply cannot be done from home. Furthermore, some employees had to lay down work completely due to the containment measures. Accordingly, some employees would have been more resilient than others. Specifically, continu-

ing one's work despite the adverse circumstances would have helped build a sense of resilience, translating into lower perceptions of job insecurity.

There has been little research on how the pandemic affected workers' perceptions of job insecurity. Exceptions include a Belgian study showing that 21% of the country's workforce was afraid of job loss as a direct consequence of the Covid-19 pandemic. This number was higher for women and vulnerable groups such as migrants, older employees and employees in temporary work (Lippens et al., 2021). Donnelly et al. (2022) found that 20% to 40% of the US workforce (depending on the time period within the Covid-19 pandemic) reported household job insecurity. Low-educated, low-income, large and non-white households were more likely to experience job insecurity. Other studies found that employees in the restaurant and hotel industry faced great uncertainty about whether and when they would return to work (H. Chen & Eyoun, 2021; Lippert et al., 2021; Wong et al., 2021). A Swiss study has shown that perceived job insecurity has particularly increased for "peripheral workers" (those on a fixed-term contract) compared to "core workers" (Edler & Staub, 2023).

To date, there is very limited evidence on the evolution of perceived job insecurity over the course of the Covid-19 pandemic. Trend analyses from Swiss surveys (the Swiss Human Relations Barometer and Barometer *Gute Arbeit*) showed decreasing levels of perceived job insecurity in 2020 (Hänggeli et al., 2023; Pfrombeck et al., 2020; Schneider et al., 2022). However, a more detailed analysis shows an increase in job insecurity in some sectors immediately following the onset of the pandemic; these included manufacturing, catering, and banking and insurance industries (Pfrombeck et al., 2020). Moreover, Edler and Staub (2023) showed a significant increase in perceived job insecurity in Switzerland between 2019 and autumn/winter 2020. However, this study focused on the first stage of the pandemic and does not describe long-term effects. Furthermore, European data showed that perceived job insecurity declined between the onset of the pandemic, in March, and July 2020, especially for countries such as Germany, France and the Netherlands (Ibanescu, Cristea, et al., 2023; Ibanescu, Gheorghiu, et al., 2023). However, no comparable data for the period before the onset of the pandemic is available.

The Covid-19 pandemic came quickly, the measures to contain the spread of the virus were tough and unprecedented in scale, and the world of work was severely affected. It can therefore be assumed that the pandemic had a high event strength for all individuals. The temporary nature of the short-time compensation and other stabilising measures might not have prevented workers from feeling insecure. It can be assumed that, at the early stage of the pandemic, feelings of job insecurity increased in the general population. However, the political measures taken in Switzerland to stabilise the economy were also prompt, and the economy recovered quickly (Wagenbach, 2021; Wegmüller & Kemeny, 2023). As a result of the relatively good economic situation in the country, the perceived risk of job loss may have decreased significantly in the course of the pandemic. Hypotheses 1a and 1b therefore read as follows:

- H1a: Perceived job insecurity increased in the general working population after the first economic shutdown.
- H1b: Perceived job insecurity decreased between 2020 and 2022 to reach pre-pandemic levels.

Although all employees were affected by the Covid-19 pandemic in some way, workers might have been impacted differently depending on the way they could – or had to – work during the economic shutdowns. In Switzerland, work-from-home and short-time work were the most frequent adaptations in the working population: 47% worked from home at least partially during the first economic shutdown (Refle et al., 2020) and one employee out of four was on short-time work (Wagenbach, 2021). Presumably, these were also the most drastic changes faced by employees. Other responses to the economic shutdown included reducing overtime or taking holidays (Refle et al., 2020). However, these were very short-term measures, lasting just a few days or weeks, and were not enough to get workers through the shutdown, let alone the pandemic. Both work-from-home and short-time work required significant adaptation efforts on the part of those affected, and are therefore likely to have had a particularly strong impact on perceptions of job insecurity. This is discussed in more detail below.

2.2 Short-Time Work

The economic crisis precipitated by the Covid-19 pandemic is different from previous recessions. Whereas former crises largely hit sectors such as construction, manufacturing or financial markets (Alon et al., 2020; Moreira & Hick, 2021), the pandemic particularly affected the service sector, notably the tourism and event industry, restaurants, hotels, sales and personal care (Alon et al., 2020; König et al., 2022). For employees who were suddenly on short-time work, the Covid-19 crisis would have had a high level of event novelty and disruption. Also, workers receiving short-time compensation would have been particularly affected by job insecurity, as their work prospects were uncertain and many of them would have lost their jobs without this measure (SECO, 2021). Indeed, studies show that having to reduce working hours, or to stop working completely, increased perceived job insecurity (Edler & Staub, 2023; Ouwerkerk & Bartels, 2022). However, due to their time frames, the aforementioned studies were not able to observe long-term effects.

Although short-time work was introduced to prevent redundancies (SECO, 2022), those affected might not have perceived their jobs as secure. While they were sidelined, they compared themselves to employees who were considered to be *systemically relevant* (Kaldewey, 2022) and whose work was perceived as indispensable (Ouwerkerk & Bartels, 2022), as well as those who could continue to work from home. Given their specific circumstances, employees on short-time work were not able to experience resilience in their jobs but had to realise that their jobs were not

very resistant to the crisis since they had to be secured by a policy measure that was, to make matters worse, only temporary.

As the economy recovered, perceived job insecurity likely decreased (Fan & Qian, 2023). However, the experience of being temporarily laid off is likely to have a lasting effect on one's professional self-image, and some may find it difficult to regain confidence for the future (De Witte, 2016). Moreover, (partial) economic shutdowns are likely to recur over time, and workers who received short-time compensation may not recover their optimism as quickly or completely as those who did not engage in short-time work. Therefore, it can be expected that the perceived job insecurity of the employees who received short-time compensation decreased less in the course of the pandemic than that of workers who have not experienced short-time work. The second hypothesis therefore reads:

- H2a: In the short run, employees who were on short-time work during the first economic shutdown experienced a steeper increase in perceived job insecurity compared to employees who were not on short-time work.
- H2b: In the long run, employees on short-time work experienced a weaker decrease in perceived job insecurity compared to employees who were not on short-time work.

2.3 Work-From-Home

One of the measures taken by governments to contain the spread of the novel coronavirus was the obligation to work from home wherever possible. In Switzerland, about one employee out of two worked from home during the first shutdown (Fritschi & Fischer, 2020; Refle et al., 2020). However, this number varied considerably across sectors (FSO, 2022). Although many organisations were indirectly affected by the partial economic shutdowns, employees who could pursue their work more or less normally from home had to worry less about the continuity of their job (Di, 2021). The transition from work-in-the-office to work-from-home was disruptive and required some adaptation, but employees who could work from home found it was possible to accomplish their work and resist external shocks (Fan & Moen, 2022). The ease of transition from the office to home-working depended in part on whether a person had worked from home before the pandemic, as previous work-from-home experience resulted in less emotional exhaustion (Wang et al., 2021) and higher levels of productivity and engagement (Galanti et al., 2021). However, prior work-from-home did not affect other outcomes such as work-family interference, loneliness (Wang et al., 2021) or performance (Bockstahler et al., 2020). Moreover, the situation during the pandemic was different, as, for example, children had to be looked after at home while working (Bockstahler et al., 2020; Dettmers & Plückhahn, 2022). As such, previous work-from-home experience only partially facilitated the transition to remote working.

Existing research shows that employees who could work from home during the economic shutdowns were less likely to apply for short-time compensation (Alipour et al., 2021) or experience job or income loss (Adams-Prassl et al., 2020; Garrote Sanchez et al., 2021). A qualitative study on tech professionals showed that software engineers, in contrast to hardware engineers who mainly work on-site, felt protected from job loss if they were able to perform their work from home (Di, 2021). Moreover, Edler and Staub (2023) showed that perceived job insecurity increased less for employees working from home if they were in academic jobs. In contrast, an Italian study found that working from home was associated with an increase in perceived job insecurity, which rose even further with the number of employees within a household working from home (Nappo et al., 2022). On the other hand, Jimenez-Gomez et al. (2021) found no differences in perceived job insecurity between remote and non-remote workers. The existing evidence on the impact of work-from-home on the perception of job insecurity is therefore inconclusive. However, employees who adapted to the pandemic by working from home likely felt a greater sense of personal and organisational resilience (Kossek & Perrigino, 2016) and a smaller increase in perceived job insecurity compared to employees who could not work from home.

In later phases of the pandemic, many employees kept working remotely because they explicitly wished to do so (Weichbrodt & Soltermann, 2022). But this would likely have been for personal reasons such as a better work-life-balance (Weichbrodt & Soltermann, 2022) or to save on commuting time (Aksoy et al., 2023). As the pandemic progressed and the economy recovered, the influence of remote work on the perception of job insecurity may therefore have diminished along with a general decline in perceived job insecurity. However, employees who were resilient and able to complete their work from home might have drawn on this experience, facing later phases of the pandemic with greater confidence. Their job insecurity is therefore likely to have increased less in the early phase, and decreased more quickly in later phases. This brings us to the third hypothesis:

- H3a: In the short run, employees who could work from home during the first economic shutdown experienced a smaller increase in perceived job insecurity compared to employees who could not work from home.
- H3b: In the long run, employees who could work from home experienced a sharper decrease in perceived job insecurity compared to those who could not work from home.

The extent to which a person feels their job is threatened is also likely to depend on the sector in which the employer is based. Compared to the public sector, the private sector is more vulnerable to economic crises (Krämer, 2015) and likely reacts more strongly to short-term economic turbulence. This is because jobs are not funded by state taxes but depend directly on the economic activity and success of the company.

In contrast to the private sector, the public sector usually implements multi-year financial planning (Fuchs et al., 2020), and short-term economic turbulence is therefore less severe for these employees. In fact, while only 6% of public sector employees in Switzerland had to do short-time work during the shutdowns, about 20% of those in the private sector did so (Ehrler et al., 2020). In general, private sector employees have higher perceptions of job insecurity than public sector employees (Anderson & Pontusson, 2007). The inherent stability of public sector jobs, however, means that these employees have less potential for resilience than their private sector counterparts in the context of the pandemic. In the private sector, moreover, there is likely to be a larger difference in feelings of resilience between those who could work from home and those who could not. I therefore hypothesise that being able to work from home, even under adverse circumstances and in times of crisis, is likely to have had a particularly positive impact on perceived job insecurity for employees in the private sector.

- H4a: In the short run, the beneficial effect of work-from-home is stronger in the private sector than in the public sector.
- H4b: In the long run, work-from-home leads to a larger decrease in perceived job insecurity in the private sector compared to the public sector.

3 Data and Method

3.1 Data

The empirical part of this paper is based on data from the longitudinal Swiss Household Panel study, which encompasses a wide range of topics (SHP Group, 2024; Tillmann et al., 2021). The SHP started in 1999 with a random sample of 7 799 individuals in 5 074 households. Refreshment samples were added in 2004, 2013 and 2020. Typically, all household members aged 14 or over are interviewed annually by telephone (and since 2020, increasingly over the internet).

To test Hypotheses 1 to 4, three different samples were used. To observe the *short-term effects* of the pandemic, Sample A used the pre-pandemic wave of 2019 that was fielded between September 2019 and February 2020, as well as the regular 2020 wave (August 2020 to February 2021) and the supplemental SHP Covid-19 web/paper–pencil survey that was performed between May and June 2020. To investigate the *long-term effects* of the pandemic, Sample B used the SHP Covid-19 survey as well as the regular waves from 2020 and 2021. Sample C used the SHP Covid-19 survey as well as the regular waves from 2020 and 2022. Respondents were included in the samples if they had participated in each wave of interest, if they were over 18 but below the official age of retirement (64 for women and 65 for men), and if they were in paid work (whether employed or self-employed) in the specific waves. Due

to partial non-response, some individuals had to be excluded (see Table 1). With these restrictions, Sample A consisted of 2 450, Sample B of 2 149, and Sample C of 1 911 individuals.

Table 1 Description of the Samples

	Data included	Excluded individuals due to item non-response	Final N
Sample A	Covid-19 + 2019 + 2020	217	2 450
Sample B	Covid-19 + 2020 + 2021	231	2 149
Sample C	Covid-19 + 2020 + 2022	254	1 911

3.2 Measures

Dependent Variable

The main variable of interest is perceived job insecurity, which therefore constitutes the dependent variable of this analysis. The question in the SHP was phrased as follows: "How do you evaluate the risk of becoming personally unemployed in the next 12 months?". Answers ranged from 0 "no risk at all" to 10 "a real risk". For the short-term consequences of the pandemic, *change in perceived job insecurity* was calculated as Y_{2020}–Y_{2019}, and for the evolution of perceived job insecurity in subsequent years, it was constructed as Y_{2021}–Y_{2020} and Y_{2022}–Y_{2020}. These variables ranged from −10 to +10, with positive values indicating an increase and negative values describing a decrease in perceived job insecurity. For descriptive statistics, see Table 2.

Independent Variables

The main independent variables of *short-time work* and *work-from-home* during the first shutdown of the Covid-19 pandemic were measured in the supplemental Covid-19 wave of the SHP. Workers were asked the following question: "Were there any short-term changes in your work situation due to the Corona crisis? Please mark all answers that apply." Among others, the respondents had the following options: 1) I am short-time working[4]; 2) I am working entirely from home; 3) I am working partly from home. Respondents who reported short-time work were coded 1 on the *short-time* variable and 0 otherwise. The *work-from-home* variable distinguished between respondents not working from home at all, individuals partially working from home, and respondents entirely working from home during the first shutdown.

4 The formulation of the short-time work option for self-employed workers was somewhat different: "I have applied for short-time work or Corona employment replacement for myself".

Table 2 Descriptive Statistics of the Variables Used in the Regression Models; Data Not Weighted

Variables	Scale	Sample A[a]	Sample B	Sample C
Change in perceived job insecurity	−10–10	0.34 (0.05)	−0.37 (0.05)	−0.6 (0.05)
Short-time work during shutdown	0/1	18.7%	18.4%	18.0%
Working from home during shutdown				
did not work from home	0/1	53.2%	51.7%	50.9%
partially worked from home	0/1	21.7%	22.5%	23.0%
entirely worked from home	0/1	25.1%	25.8%	26.2%
Female	0/1	53.4%	52.1%	51.7%
Age (centred)	18–64	46.4 (0.23)	47.1 (0.24)	46.5 (0.25)
Industrial sector (NOGA)[b]				
Manufacturing	0/1	11.6%	11.3%	11.5%
Construction	0/1	2.4%	2.3%	2.3%
Wholesale, retail; repair motor vehicles	0/1	9.5%	9.5%	9.0%
Hotels and restaurants	0/1	1.9%	1.7%	1.8%
Transport, storage and communications	0/1	4.6%	4.6%	4.6%
Financial intermediation; insurance	0/1	6.0%	5.9%	6.4%
Real estate; renting; computer; research	0/1	14.0%	14.4%	14.5%
Public administration, national defence; compulsory social security	0/1	10.0%	10.6%	10.7%
Education	0/1	12.7%	13.2%	12.9%
Health and social work	0/1	17.0%	16.5%	16.1%
Other community, social and personal services	0/1	5.8%	5.6%	5.6%
Other	0/1	4.6%	4.4%	4.7%
Non-Swiss	0/1	5.0%	4.4%	4.5%
Changes in regional unemployment rates	−3.7–3.8	0.4 (0.01)	0.3 (0.01)	−0.5 (0.01)
Self-employed during shutdown	0/1	9.9%	9.5%	9.2%
Pre-pandemic work-from-home	0/1	47.0%	47.4%	47.4%
Change of job or employer	0/1	8.9%	8.7%	17.4%
Type of contract				
Permanent contract	0/1	86.1%	87.5%	87.8%
Fixed-term contract	0/1	5.7%	4.5%	4.2%
Unknown type of contract	0/1	8.2%	8.0%	8.0%
Working in the private sector	0/1	61.6%	60.6%	60.9%
Number of individuals		2 450	2 149	1 911

a) For continuous variables, means (M) and standard errors of the mean (SEM) are reported; for dummy variables, the share of category 1 is reported. b) Due to empty or low incidence, some categories are recoded into the group "other". These are agriculture, hunting, forestry; electricity, gas and water supply; extra-territorial organisations. Source: Swiss Household Panel, 2019–2022.

Respondents were classified as working in the *public sector* (coded 0) versus the *private sector* (coded 1) to test whether this affected the relationship between work-from-home and perceived job insecurity.

Control Variables

Some characteristics known to influence perceptions of job insecurity might be correlated with the independent variables (Alipour et al., 2023; Garrote Sanchez et al., 2021; Hijzen & Salvatori, 2022; Keim et al., 2014) and are therefore controlled for in the regression analyses. For *gender*, a dummy variable was coded 1 for females and 0 otherwise. *Age* was centred on the grand mean. Moreover, a dummy variable was added for *non-Swiss* respondents (coded 1). To control for *preparedness for work-from-home*, a dummy variable distinguished between individuals who already worked from home in 2019 (coded 1) and individuals who didn't. Furthermore, the respondent's *type of contract* was controlled for, distinguishing between permanent and fixed-term contracts. Since the contract type did not apply to workers in private households or family businesses, an additional category for "unknown type of contract" was added. In addition, *self-employment* in the Covid-19 wave was controlled for (coded 1 for the self-employed, 0 otherwise). A variable coded 1 for respondents who had a *change of job or employer* between waves, and *changes in unemployment rates* in the major regions of Switzerland were controlled for (BFS, 2023). Finally, the General Classification of Economic Activities (NOGA) was used to control for the respondents' *industrial sector* (FSO, 2008). "Health and social work" was used as the reference category because it was the largest group in the samples. As the respondents' industry was highly collinear with the workers' level of education, educational level could not be controlled for.

Except for *change of job or employer* which was measured at the second observation (for sample C it was measured in both 2021 and 2022), all control variables were measured at the first observation (i.e., in 2019 for Sample A and 2020 for Samples B and C).

3.3 Method

Ordinary least squares (OLS) regressions with change scores for the dependent variables (Allison, 1990) were used to estimate the impact of the work situation during the pandemic's first economic shutdown. Change scores for perceived job insecurity were calculated as Yt2 – Yt1, as explained in the measurement section above, and regressed on the independent and control variables. This means that the models do not explain absolute levels of perceived job insecurity, but changes in these levels between different time points. As educational level could not be controlled for, and to correct for non-response and attrition, cross-sectional survey weights were used (for 2019 in Sample A and for 2020 in Samples B and C).

Preliminary analyses with change scores for perceived job insecurity between 2019 and 2022 showed no significant effects for short-time work or work-from-home (see Table A.1 in the Appendix). It was therefore necessary to look at shorter periods to discern the evolution of perceived job insecurity at different stages of the pandemic.

To test the *short-term effects* of short-time work and work-from-home on changes in perceived job insecurity, Sample A was used (see Table 3). Model 1 contains all the control variables, Model 2 adds short-time work and Model 3 additionally includes work-from-home. Finally, an interaction term was added to Model 4 to test the relevance of private versus public sector employment for the relationship between work-from-home and perceived job insecurity.

The *long-term effects* of short-time work and work-from-home on perceived job insecurity are reported in Table 4. Models 1 to 4 were based on Sample B, referring to changes between 2020 and 2021, and on Sample C, measuring the changes between 2020 and 2022. Model 1 contains all the control variables. Model 2 additionally includes short-time work. In Model 3, work-from-home was added and Model 4 includes the interaction term *work-from-home x private sector*.

4 Results

4.1 The Short-Term Impact of Short-Time Work and Work-From-Home on Perceptions of Job Insecurity

The first part of each hypothesis (1a, 2a, 3a and 4a) is concerned with an aspect of short-term impact. Long-term impacts are reported in the next subsection.

To test Hypothesis 1a, I refer to the descriptive statistics in Table 2 showing a general increase in perceived job insecurity of about 0.34 units between the 2019 pre-pandemic wave and the 2020 wave (M = 0.34, 95% confidence interval (CI) = [0.24, 0.43]). The results confirm Hypothesis 1a.

Model 1 in Table 3 shows that women, older-than-average employees and employees who changed their job or employer between 2019 and 2020 reported a decrease in perceived job insecurity. In contrast, it increased considerably for workers in the private sector. Unsurprisingly, hotel and restaurant workers (when used as the reference category; not reported here) were the most affected by the shutdown. Having worked from home before the pandemic, being self-employed during the first shutdown, the type of contract and fluctuations in regional unemployment rates did not affect changes in perceived job insecurity.

To test Hypothesis 2a – that employees on short-time work would experience the steepest increase in perceived job insecurity – short-time work was included as an independent variable in Model 2. Employees on short-time work during Switzerland's first economic shutdown did indeed report a bigger increase in perceived job

Table 3 OLS Regression Analyses Predicting Changes in Perceived Job Insecurity Between 2019 and 2020; Data Is Weighted

	Model 1	Model 2	Model 3	Model 4
Female	−0.193*	−0.245**	−0.241**	−0.247**
	(0.108)	(0.107)	(0.107)	(0.107)
Age (centred)	−0.010**	−0.010**	−0.010**	−0.011**
	(0.005)	(0.005)	(0.005)	(0.005)
Industrial sector (NOGA) (ref. health and social workers)				
Manufacturing	0.303	0.144	0.207	0.200
	(0.206)	(0.205)	(0.206)	(0.206)
Construction	0.121	0.176	0.178	0.137
	(0.323)	(0.320)	(0.319)	(0.318)
Wholesale, retail; repair motor vehicles	0.306	0.183	0.259	0.267
	(0.213)	(0.212)	(0.212)	(0.212)
Hotels and restaurants	3.231***	2.820***	2.847***	2.849***
	(0.356)	(0.358)	(0.356)	(0.356)
Transport, storage and communications	0.331	0.157	0.223	0.209
	(0.258)	(0.257)	(0.257)	(0.257)
Financial intermediation; insurance	0.170	0.327	0.431*	0.456*
	(0.250)	(0.249)	(0.254)	(0.254)
Real estate; renting; computer; research	0.332*	0.359*	0.430**	0.406**
	(0.192)	(0.190)	(0.192)	(0.192)
Public administration, national defence; compulsory social security	0.249	0.268	0.337	0.329
	(0.228)	(0.226)	(0.228)	(0.230)
Education	0.203	0.194	0.262	0.214
	(0.216)	(0.214)	(0.217)	(0.222)
Other community, social and personal services	0.297	0.236	0.227	0.275
	(0.253)	(0.251)	(0.251)	(0.251)
Other	−0.090	0.041	0.129	0.119
	(0.265)	(0.263)	(0.264)	(0.264)
Non-Swiss	0.064	−0.014	0.018	0.027
	(0.137)	(0.136)	(0.136)	(0.135)

Continuation of Table 3 on the next page.

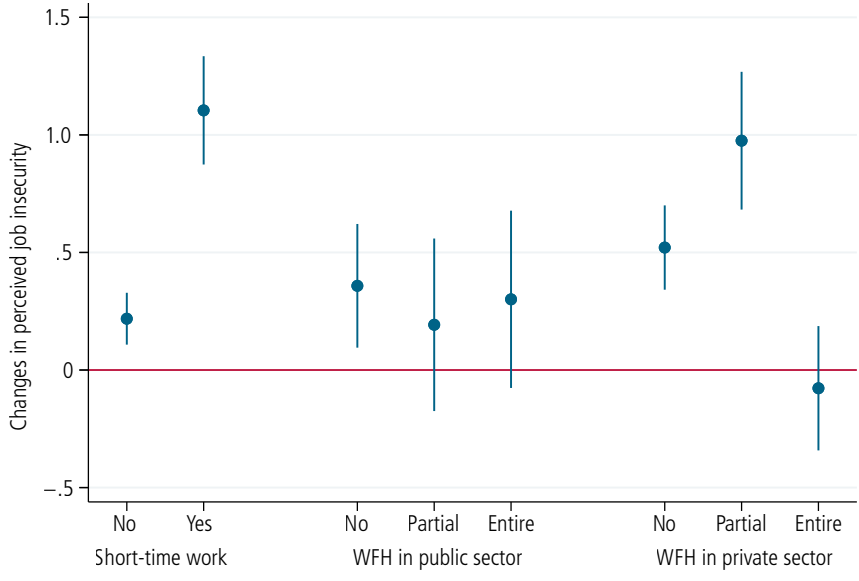
Continuation of Table 3.

	Model 1	Model 2	Model 3	Model 4
Change in regional unemployment rate	0.099	0.134	0.148	0.155
	(0.136)	(0.135)	(0.135)	(0.134)
Self-employed during shutdown	−0.029	−0.133	−0.152	−0.143
	(0.225)	(0.224)	(0.223)	(0.223)
Pre-pandemic work-from-home	0.022	0.055	0.167	0.169
	(0.111)	(0.110)	(0.117)	(0.116)
Change of job or employer	−0.287*	−0.250	−0.243	−0.225
	(0.171)	(0.170)	(0.169)	(0.169)
Type of contract (ref. permanent contract)				
Fixed-term contract	0.028	0.078	0.101	0.062
	(0.212)	(0.211)	(0.210)	(0.210)
Unknown type of contract	0.149	0.169	0.132	0.133
	(0.231)	(0.228)	(0.229)	(0.229)
Private sector	0.321**	0.159	0.172	0.163
	(0.147)	(0.148)	(0.147)	(0.171)
Short-time work		0.920***	0.897***	0.886***
		(0.134)	(0.135)	(0.134)
Work-from-home (ref. no work from home)				
Partially worked from home			0.189	−0.166
			(0.135)	(0.213)
Entirely worked from home			−0.409***	−0.057
			(0.136)	(0.221)
Private sector x partially worked from home				0.620**
				(0.269)
Private sector x entirely worked from home				−0.541**
				(0.261)
Constant	−0.040	−0.081	−0.135	−0.122
	(0.186)	(0.185)	(0.186)	(0.192)
Observations	2 450	2 450	2 450	2 450
Adjusted R-squared	0.042	0.059	0.065	0.070

Note: Standard errors in parentheses, ***p < 0.01, **p < 0.05, *p < 0.1. Calculations based on Sample A.
Source: Swiss Household Panel, 2019–2020.

insecurity between 2019 and 2020 compared to employees not on short-time work. Figure 1 shows the linear predictions of changes in perceived job insecurity for workers who were on versus not on short-time work during the first shutdown (it also contains the linear predictions for employees with work-from-home arrangements, which will be described below). While employees who did do short-time work experienced a slight increase in perceived job insecurity, the increase was significantly higher for those on short-time work ($b = 1.1$, $p < 0.001$), confirming Hypothesis 2a.

Figure 1 Predictive Margins of Short-Time Work and Work-From-Home by Sector



Note: Linear predictions of changes in perceived job insecurity for short-time work and work-from-home (WFH) by sector based on Model 4 of Table 3. Confidence intervals are set at 95% and data is weighted.
Source: Swiss Household Panel, 2019–2020.

Hypothesis 3a assumed that employees who worked from home during the first economic shutdown in 2020 would have experienced a smaller increase in perceived job insecurity compared to those who could not work from home. To test this, *work-from-home* was included in Model 3 in Table 3. Indeed, employees who worked entirely from home showed a smaller increase in perceived job insecurity than those who could not work from home at all ($b = -0.409$, $p = 0.003$). These results show that being able to perform the entirety of one's work from home had a protective effect on perceived job insecurity. Unexpectedly, employees who *partially* worked from home showed some increase in perceived job insecurity. However, the

increase was not significant in this model (b = 0.189, p = 0.163). Hypothesis 3a is partially confirmed.

According to Hypothesis 4a, work-from-home should have been particularly beneficial for employees working in the private sector. To test this, interaction terms introduced in Model 4 turned out to be statistically significant, while the main effects (referring to work-from-home in the public sector) were not. Therefore, the protective effect of work-from-home only holds for individuals working in the private sector. Moreover, it was only present if the entirety of one's work could be accomplished from home (b = –0.541, p = 0.038). In contrast, employees in the private sector who only partially worked from home reported the steepest increase in perceived job insecurity (b = 0.620, p = 0.021). Figure 1 shows the linear predictions of changes in perceived job insecurity for the extent of work-from-home by sector, confirming Hypothesis 4a.

4.2 The Long-Term Impact of Short-Time Work and Work-From-Home on Perceptions of Job Insecurity

The descriptive statistics in Table 2 show that perceptions of job insecurity declined by 0.37 units (M = –0.37, 95% CI = [–0.46, –0.27]) between 2020 and 2021 and by 0.6 units between 2020 and 2022 (M = –0.6, 95% CI = [–0.71, –0.49]), reaching even lower than pre-pandemic levels, confirming Hypothesis 1b. These results are supported by Figure A.1 in the Appendix, predicting absolute levels of perceived job insecurity.

Model 1 in Table 4 included the control variables only. To test Hypothesis 2b, expecting workers on short-time work to experience a weaker long-term decrease in perceived job insecurity (between 2020 and 2021/2022), short-time work was included in Model 2. Both a one- and a two-year follow-up period showed a significantly bigger decrease in job insecurity for those who did short-time work during the first shutdown. Following a steep rise in perceived job insecurity from 2019 to 2020, workers on short-time work also reported a significant decline in the subsequent years, which is contrary to the expectations of Hypothesis 2b.

Furthermore, no significant long-term effects of work-from-home on perceived job insecurity could be observed: employees who could work from home did not report larger decreases in job insecurity than those who could not. This holds both for the private and public sectors and therefore rejects both Hypotheses 3b and 4b. However, Models 3 and 4 (particularly Model 4 on the left) show a tendency for decreasing levels of perceived job insecurity for employees who partially worked from home, and increasing levels for those who worked entirely from home. However, tested against full work-from-home as the reference category (not reported), this convergence remains statistically insignificant. This observation shows that those who reported the largest increase in the short run also experienced the biggest

Table 4 OLS Regression Analyses Predicting Changes in Perceived Job Insecurity Between 2020 and 2021/2022; Data Is Weighted

	Changes in perceived job insecurity between 2020 and 2021				Changes in perceived job insecurity between 2020 and 2022			
	Model 1	Model 2	Model 3	Model 4	Model 1	Model 2	Model 3	Model 4
Female	−0.131	−0.114	−0.113	−0.112	−0.034	−0.022	−0.020	−0.020
	(0.107)	(0.107)	(0.107)	(0.107)	(0.119)	(0.119)	(0.119)	(0.119)
Age (centred)	−0.010**	−0.010**	−0.010**	−0.009**	−0.008	−0.008	−0.009	−0.008
	(0.005)	(0.005)	(0.005)	(0.005)	(0.005)	(0.005)	(0.005)	(0.005)
Industrial sector (NOGA) (ref. health and social workers)								
Manufacturing	−0.983***	−0.899***	−0.910***	−0.910***	−0.863***	−0.802***	−0.796***	−0.795***
	(0.204)	(0.205)	(0.206)	(0.206)	(0.224)	(0.226)	(0.227)	(0.227)
Construction	0.019	0.005	0.010	0.019	0.815**	0.815**	0.830**	0.834**
	(0.327)	(0.327)	(0.327)	(0.327)	(0.362)	(0.362)	(0.362)	(0.363)
Wholesale, retail; repair motor vehicles	−0.169	−0.120	−0.135	−0.137	−0.043	−0.011	−0.016	−0.015
	(0.208)	(0.208)	(0.209)	(0.209)	(0.237)	(0.237)	(0.238)	(0.238)
Hotels and restaurants	−1.065***	−0.824**	−0.830**	−0.841**	−2.360***	−2.179***	−2.182***	−2.182***
	(0.367)	(0.374)	(0.374)	(0.374)	(0.408)	(0.419)	(0.418)	(0.419)
Transport, storage and communications	−0.234	−0.186	−0.207	−0.215	−0.504*	−0.480*	−0.482*	−0.483*
	(0.257)	(0.257)	(0.258)	(0.258)	(0.288)	(0.288)	(0.289)	(0.289)

Continuation of Table 4 on the next page.

Continuation of Table 4.

	Changes in perceived job insecurity between 2020 and 2021				Changes in perceived job insecurity between 2020 and 2022			
	Model 1	Model 2	Model 3	Model 4	Model 1	Model 2	Model 3	Model 4
Financial intermediation; insurance	−0.428	−0.486*	−0.518*	−0.533**	−0.233	−0.270	−0.249	−0.254
	(0.260)	(0.260)	(0.267)	(0.267)	(0.278)	(0.278)	(0.285)	(0.286)
Real estate; renting; computer; research	0.013	−0.011	−0.037	−0.042	−0.272	−0.290	−0.278	−0.279
	(0.189)	(0.188)	(0.192)	(0.192)	(0.208)	(0.208)	(0.211)	(0.211)
Public administration, national defence; compulsory social security	−0.025	−0.031	−0.055	−0.055	−0.160	−0.162	−0.153	−0.148
	(0.215)	(0.214)	(0.217)	(0.219)	(0.237)	(0.237)	(0.241)	(0.244)
Education	0.019	0.037	0.011	0.029	0.035	0.048	0.067	0.077
	(0.208)	(0.208)	(0.212)	(0.217)	(0.233)	(0.233)	(0.237)	(0.243)
Other community, social and personal services	0.155	0.197	0.194	0.173	−0.218	−0.183	−0.164	−0.167
	(0.251)	(0.251)	(0.252)	(0.253)	(0.285)	(0.286)	(0.286)	(0.287)
Other	0.111	0.085	0.052	0.033	0.179	0.168	0.160	0.159
	(0.275)	(0.274)	(0.276)	(0.278)	(0.297)	(0.297)	(0.299)	(0.300)
Non-Swiss	0.469***	0.488***	0.482***	0.481***	0.136	0.143	0.131	0.130
	(0.159)	(0.159)	(0.159)	(0.159)	(0.173)	(0.173)	(0.173)	(0.174)
Change in regional unemployment rate	0.448**	0.442**	0.452**	0.446**	−0.093	−0.108	−0.109	−0.111
	(0.187)	(0.186)	(0.187)	(0.187)	(0.230)	(0.230)	(0.230)	(0.231)

	Changes in perceived job insecurity between 2020 and 2021				Changes in perceived job insecurity between 2020 and 2022			
	Model 1	Model 2	Model 3	Model 4	Model 1	Model 2	Model 3	Model 4
Self-employed during shutdown	−0.137	−0.074	−0.057	−0.048	−0.231	−0.190	−0.160	−0.160
	(0.240)	(0.240)	(0.240)	(0.241)	(0.267)	(0.267)	(0.268)	(0.269)
Pre-pandemic work-from-home	0.009	−0.021	−0.057	−0.062	0.056	0.036	0.023	0.022
	(0.109)	(0.109)	(0.115)	(0.115)	(0.121)	(0.121)	(0.127)	(0.127)
Change of job or employer	−0.890***	−0.880***	−0.873***	−0.886***	−0.867***	−0.854***	−0.858***	−0.860***
	(0.175)	(0.175)	(0.175)	(0.175)	(0.148)	(0.148)	(0.148)	(0.148)
Type of contract (ref. permanent contract)								
Fixed-term contract	0.143	0.125	0.111	0.138	−0.486*	−0.511*	−0.529*	−0.520*
	(0.239)	(0.238)	(0.238)	(0.240)	(0.275)	(0.276)	(0.276)	(0.277)
Unknown type of contract	0.266	0.244	0.248	0.243	-0.041	−0.063	−0.089	−0.088
	(0.262)	(0.261)	(0.262)	(0.262)	(0.279)	(0.279)	(0.280)	(0.281)
Private sector	−0.035	0.048	0.041	0.046	−0.120	−0.066	−0.076	−0.086
	(0.139)	(0.141)	(0.141)	(0.165)	(0.155)	(0.157)	(0.158)	(0.185)
Short-time work		−0.438***	−0.432***	−0.430***		−0.293*	−0.296*	−0.295*
		(0.137)	(0.138)	(0.138)		(0.155)	(0.156)	(0.156)
Work-from-home (ref. no work from home)								
Partially worked from home			−0.057	0.078			−0.216	−0.205
			(0.132)	(0.207)			(0.146)	(0.230)
Entirely worked from home			0.138	0.008			0.051	0.004
			(0.136)	(0.215)			(0.150)	(0.242)

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Continuation of Table 4.

	Changes in perceived job insecurity between 2020 and 2021				Changes in perceived job insecurity between 2020 and 2022			
	Model 1	Model 2	Model 3	Model 4	Model 1	Model 2	Model 3	Model 4
Private sector x partially worked from home				−0.232				−0.021
				(0.263)				(0.291)
Private sector x entirely worked from home				0.212				0.074
				(0.259)				(0.290)
Constant	−0.178	−0.164	−0.155	−0.157	−0.165	−0.167	−0.124	−0.120
	(0.181)	(0.180)	(0.182)	(0.188)	(0.224)	(0.224)	(0.225)	(0.231)
Observations	2 149	2 149	2 149	2 149	1 911	1 911	1 911	1 911
Adjusted R-squared	0.034	0.038	0.038	0.038	0.052	0.054	0.054	0.053

Note: Standard errors in parentheses, ***p<0.01, **p<0.05, * p<0.1.
Calculations based on Sample B on the left and Sample C on the right side.
Source: Swiss Household Panel, 2020–2022.

decrease in the long run, cancelling out the effect overall, as shown in Table A.1 in the Appendix. It shows that neither short-time work nor work-from-home affected longer-term changes in perceived levels of job insecurity between 2019 and 2022. The slightly less favourable evolution of perceived job insecurity for employees who partially worked from home is nonetheless insignificant.

5 Discussion

There has been little research, either from the short- or long-term perspective, that addresses the question of how the Covid-19 pandemic affected employees' perceptions of job insecurity, and the few existing studies mainly give insights into specific professional groups (Chen & Eyoun, 2021; Di, 2021; Jimenez-Gomez et al., 2021; Lippert et al., 2021; Wong et al., 2021). The present study based on the longitudinal SHP has two main advantages: First, it measures the impact of the pandemic on the general working population. Second, due to its design, it is possible to investigate the short- and long-term effects of the pandemic by comparing pre-pandemic waves to early and later stages of the pandemic.

This study aimed to investigate the short- and long-term impact of two prevalent conditions of the first economic shutdown on perceptions of job insecurity: short-time work and work-from-home. This yields four main findings. First, the Covid-19 pandemic increased the perception of job insecurity in the general working population. However, this effect was not of long duration. Within 24 months of the onset of the pandemic, perceived job insecurity was already lower than pre-pandemic levels.

Second, the economic shutdown did not affect all employees in the same way. Relying on event system theory, it was assumed that perceived job insecurity would particularly increase for employees who experienced a high level of novelty, disruption and criticality. It may be assumed that work disruption and criticality were highest for employees on short-time work due to the economic shutdown. Their daily (work) routines would have been widely affected, and the long-term effects of the pandemic would have been particularly incalculable, given that short-time compensation was only a temporary measure. The results confirm that employees on short-time work experienced the highest increase in perceived job insecurity. While some employees proved systemically relevant and others were able to relocate their physical workplace, those on short-time work had little opportunity to perceive themselves and their jobs as resilient. The present results are in line with previous findings (Edler & Staub, 2023; Ouwerkerk & Bartels, 2022). Interestingly, and against expectations, workers on short-time work also experienced the steepest decline in job insecurity in subsequent years. The swift normalisation of workers' perceptions of job insecurity seems to reflect the rapid recovery of the Swiss econ-

omy. Although short-time work turns out to be mainly a short-term predictor, it still plays a central role in the perception of job insecurity: Short-time work is an effective way of protecting jobs (Wagenbach, 2021), but it also reveals which jobs are vulnerable to crises. Therefore, it can be considered an antecedent of perceived job insecurity (Klug et al., 2024).

Third, for workers in the private sector, work-from-home turned out to be a protective factor against perceived job insecurity if the entirety of the job could be accomplished from home. Although the transition from office work to work-from-home might have been very disruptive, this was presumably transitory (Fan & Moen, 2022; Razmerita et al., 2021). After a period of adaptation, remote workers might have built resilience and confidence, realising that they could bounce back and accomplish their work under the most adverse circumstances. However, against expectations, the protective effect was only apparent for individuals who could do the entirety of their work from home. In contrast, employees who only partially worked from home displayed the biggest increase in perceived job insecurity. These employees presumably experienced more disruption in their daily work routines and may constitute a specific group, as they obviously could not entirely shift to work-from-home. It may be that these workers tried hard to accomplish their work from home, but had jobs with low work-from-home capacity (Alipour et al., 2023). On the one hand, these employees have not developed a sense of resilience by switching to work-from-home and thus gaining confidence that their jobs will remain secure in the future. On the other hand, this group may not have received enough support from their employers, or not enough attention from the government, and there might have been fewer protective measures to secure these jobs. More detailed data would be necessary to understand whether these employees held jobs with low work-from-home capacity, whether they lacked support to make the transition to remote work, or whether there were other reasons for their partial work-from-home. In the long run, workers who partially worked from home tended to experience the biggest decrease in perceived job insecurity. The relationship between work-from-home and the perception of job insecurity has been little explored so far, and the findings are still inconclusive (see Di, 2021; Edler & Staub, 2023; Jimenez-Gomez et al., 2021; Nappo et al., 2022). The distinction between partial and complete work-from-home has proven crucial and might explain why previous studies did not find a robust protective effect of work-from-home. Edler and Staub (2023), for example, used the same data source but combined all workers with any amount of work-from-home into a single category. The beneficial effects of working entirely from home may therefore have been masked by workers who partially worked from home. The present study is consistent with Adams-Prassl et al. (2020) who show that the higher the proportion of tasks that can be done from home, the lower the risk of actual job loss. It is not only the mere possibility of working from home that is crucial for securing one's job, but also the amount of work that can be done remotely.

Fourth, the present study showed that work-from-home mattered only for employees working in the private sector. This sector is sensitive to the macroeconomic situation (Anderson & Pontusson, 2007; Krämer, 2015), which is reflected in the workforce: Working entirely from home turned out to be an advantage during the pandemic in terms of perceived job insecurity, while partially working from home has been revealed to be a disadvantage. In contrast, in the public sector, where jobs are financed by tax revenues, the possibility of working from home had no effect on perceived job insecurity. To the best of my knowledge, this novel finding has not yet been described in the literature, and it underlines the importance of taking the sector into account when analysing the effects of the pandemic on work-related outcomes.

A couple of recommendations can be made based on the present study. It shows that employers and managers can make a difference for their workforce if they support them in adapting to new circumstances. Work-from-home can be an efficient way to perform one's work under adverse conditions and to protect oneself from the perception of job insecurity, so employers should support their staff in making this transition. Specifically, they should focus on those employees who can only partially work from home and determine what additional measures are needed to enable them to perform the entirety of their work from home in times of crisis. Governments should also support the adaptations needed to face future crises, providing financial resources to promote digitalisation and digital education, and to increase cybersecurity (Federal Council, 2024). However, governments should also provide resources to secure jobs that cannot be done from home, as perceived job security is an important prerequisite for good mental and physical health (Kim & von dem Knesebeck, 2016; Klug et al., 2020).

Although the present study expands existing knowledge on the effects of the Covid-19 pandemic on the perception of job insecurity, it also has some limitations. First, short-time work and work-from-home have been treated separately, whereas some people experienced a combination of the two. The present data do not allow us to analyse these cases, with only 53 to 72 relevant instances (depending on the sample). Second, there is no information on the ease of transition for employees who switched to working from home. Although the pre-pandemic experience of working from home is a good proxy for ease, we cannot distinguish between individuals who had an easy versus a difficult transition. Third, this study only considered individuals who were employed at the time of the interview. However, some individuals dropped out due to unit non-response, and some (18 to 23 cases, depending on the sample) became unemployed between waves and were therefore excluded from the analyses. Although this is a very small number, they result in a conservative estimate as those with the highest levels of job insecurity may have been excluded. It is also important to recall that the analyses are based on three different samples. It would have been possible to use a single sample with respondents who participated in every wave of interest, but this would have reduced the sample by about 14% and might have introduced some selectivity and, therefore, the present results are

presumably more accurate with the adopted procedure. Although the final samples are highly overlapping, with 74% of respondents represented in all three samples, 13% in two samples and a further 13% in only one, the models should, however, be compared with caution.

Overall, we should be cautious about generalising the present findings. Depending on the economic context and how governments handled the Covid-19 pandemic (World Bank Group, 2022), the effects of short-time work and work-from-home on perceived job insecurity may have been different. Moreover, the results might have been different if the economic crisis had had a different origin: Klug et al. (2024) focused on the Great Recession of 2008 and found a similar short-term increase in perceived job insecurity for employees on short-time work, but they also found a lasting effect of short-time work on perceived job insecurity, in contrast with the present study. This suggests that the cause of the economic crisis is likely to have influenced the longer-term course (KOF, 2021).

The present study shows that work-from-home can be protective for the perception of job insecurity. However, it is known that large parts of the workforce do not have access to work-from-home due to the nature of their job (Lund et al., 2020). Furthermore, there is a strong relationship between the ability to work from home and the employee's level of education: Low-educated workers are less likely to have access to work-from-home options compared to highly educated workers (Lund et al., 2020; Refle et al., 2020). This difference might increase inequality within the workforce. Therefore, future research should explore the potentially discriminating effects of work-from-home.

In summary, the pandemic was an important external shock that drastically increased perceived levels of job insecurity in Switzerland in the short term. Luckily, the negative effects were not of long duration, and a quick recovery could be observed. The insights of the present study are important as the future might bring new (and unforeseen) challenges, such as new pandemics, natural disasters linked to climate change or other triggers of economic crisis (Jimenez-Gomez et al., 2021).

6 Data availability

The data underlying this article are available in SWISSUbase at https://www.swissubase.ch/en/catalogue/studies/6097/18018/overview.

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Appendix

The Appendix shows additional analyses based on data from 2019 and 2022, without accounting for interim changes in the intervening years, except for job/employer changes. All other sample inclusion criteria are the same as in the main analysis.

Table A.1 thus describes changes in perceived job insecurity between 2019 and 2022 without taking into consideration changes from one year to the next. It shows no significant effects of short-time work and work-from-home on changes in perceived job insecurity. This result highlights the importance of breaking the three-year span, from 2019 to 2022, into shorter periods to gain insight into changes that occurred due to short-time work and working from home during the first economic shutdown in Switzerland. Furthermore, it shows that the shock of the pandemic did not have lasting effects. In fact, the situation has returned to normal after two years.

Table A1 OLS Regression Predicting Changes in Perceived Job Insecurity Between 2019 and 2022; Data Is Weighted

	Model 1	Model 2	Model 3	Model 4
Female	−0.209*	−0.221*	−0.218*	−0.222*
	(0.118)	(0.119)	(0.118)	(0.118)
Age (centred)	−0.012**	−0.012**	−0.012**	−0.012**
	(0.005)	(0.005)	(0.006)	(0.006)
Industrial sector (ref. health and social workers)				
Manufacturing	−0.144	−0.185	−0.154	−0.151
	(0.221)	(0.224)	(0.225)	(0.225)
Construction	0.896**	0.899**	0.903**	0.893**
	(0.353)	(0.353)	(0.353)	(0.353)
Wholesale, retail; repair motor vehicles	0.112	0.089	0.125	0.130
	(0.241)	(0.242)	(0.243)	(0.243)
Hotels and restaurants	0.121	0.021	0.036	0.052
	(0.376)	(0.384)	(0.384)	(0.385)
Transport, storage and communications	−0.362	−0.385	−0.361	−0.371
	(0.286)	(0.286)	(0.287)	(0.287)
Financial intermediation; insurance	0.022	0.053	0.080	0.088
	(0.271)	(0.272)	(0.279)	(0.279)
Real estate; renting; computer; research	−0.084	−0.073	−0.047	−0.057
	(0.210)	(0.210)	(0.213)	(0.213)
Public administration, national defence; compulsory social security	−0.247	−0.243	−0.223	−0.217
	(0.245)	(0.245)	(0.249)	(0.251)
Education	−0.307	−0.310	−0.296	−0.296
	(0.235)	(0.235)	(0.238)	(0.244)
Other community, social and personal services	−0.096	−0.113	−0.128	−0.105
	(0.283)	(0.283)	(0.284)	(0.284)
Other	−0.188	−0.164	−0.131	−0.134
	(0.284)	(0.285)	(0.286)	(0.287)
Non-Swiss	−0.043	−0.050	−0.035	−0.036
	(0.151)	(0.151)	(0.151)	(0.151)

Continuation of Table A1 on the next page.

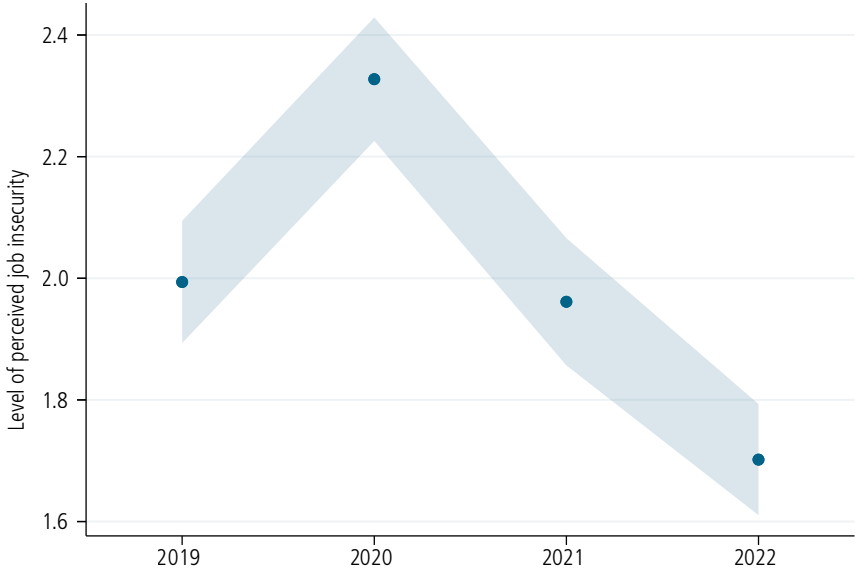
Continuation of Table A1.

	Model 1	Model 2	Model 3	Model 4
Change in regional unemployment rate	0.114	0.123	0.129	0.132
	(0.130)	(0.130)	(0.130)	(0.130)
Self-employed during shutdown	0.094	0.073	0.059	0.054
	(0.256)	(0.257)	(0.257)	(0.257)
Pre-pandemic work-from-home	0.063	0.071	0.112	0.114
	(0.121)	(0.121)	(0.128)	(0.128)
Change of job or employer	−0.345***	−0.355***	−0.356***	−0.358***
	(0.133)	(0.133)	(0.134)	(0.134)
Type of contract (ref. permanent contract)				
Fixed-term contract	−0.988***	−0.967***	−0.939***	−0.953***
	(0.252)	(0.252)	(0.253)	(0.253)
Unknown type of contract	−0.070	−0.060	−0.063	−0.053
	(0.258)	(0.258)	(0.259)	(0.259)
Private sector	−0.126	−0.160	−0.154	−0.204
	(0.161)	(0.163)	(0.163)	(0.193)
Short-time work		0.193	0.187	0.181
		(0.153)	(0.153)	(0.153)
Work-from-home (ref. no work from home)				
Partially worked from home			0.180	-0.031
			(0.145)	(0.230)
Entirely worked from home			−0.152	−0.075
			(0.149)	(0.240)
Private sector x partially worked from home				0.356
				(0.291)
Private sector x entirely worked from home				−0.127
				(0.285)
Constant	0.105	0.103	0.060	0.096
	(0.194)	(0.194)	(0.197)	(0.206)
Observations	1 920	1 920	1 920	1 920
Adjusted R-squared	0.015	0.015	0.016	0.016

Note: Standard errors in parentheses, ***p < 0.01, **p < 0.05, *p < 0.1
Source: Swiss Household Panel, 2019–2022.

Based on the same sample as Table A.1, and using pooled OLS regressions, Figure A.1 predicts absolute levels of perceived job insecurity (as opposed to the change scores in the main analyses) for each year, with perceived levels of job insecurity as the dependent variable and year dummies as the independent variables (data is weighted). It shows that perceived job insecurity was highest in 2020 and significantly dropped thereafter, with the lowest levels of perceived job insecurity in 2022.

Figure A.1 Predicted Absolute Levels of Perceived Job Insecurity by Year With Confidence Intervals at 95%; Data Is Weighted



Source: Swiss Household Panel, 2019–2022.