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Fabio Angei

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CRENoS – CAGLIARI
VIA SAN GIORGIO 12, I-09124 CAGLIARI, ITALIA
TEL. +39-070-6756397

CRENoS - SASSARI
VIA MURONI 25, I-07100 SASSARI, ITALIA
TEL. +39-079-213511

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Viale Bonaria 98 - 09125 Cagliari
Tel. 070/6848663 - info@arkadiaeditore.it
www.arkadiaeditore.it

Silent alarms: workplace injuries under-reporting in Italy

Fabio Angei†
Department of Economics and Business, University of Cagliari & CRENoS

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Abstract

This paper studies the under-reporting of workplace injuries in Italy, leveraging administrative data on work accidents. Using a difference-in-differences approach, I compare injury reporting behavior across provincial economic sectors exposed to the news of a fatal workplace accident with those not exposed, providing a causal estimate of the effect of the news. The analysis reveals that, in the weeks following such news, the weekly number of non-severe injuries reported per 100,000 workers increases. This suggests that, under typical conditions, a substantial number of non-severe accidents remain unreported. Two mechanisms drive this pattern: media coverage, which likely puts pressure on both firms and workers to better comply with reporting standards, and a strong presence of workers' unions. In fact, a decomposition of the ATT shows that the effect is stronger in provinces with higher union membership.

Keywords and phrases: Workplace Injuries, Reporting Behaviour, Fatal Workplace Accidents, Media Coverage, Unions, Difference-in-Differences.
JEL Codes: J28, J81, J83, C22.

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†Email: fabio.angei@unica.it

1 Introduction

Ensuring the safety of workers is one of the most important challenges in modern economies and a primary concern for workers, unions, and policymakers. The International Labour Organization (ILO) estimates that nearly three million workers die annually due to work-related accidents and diseases, with 395 million non-fatal work injuries worldwide (ILO, 2023b).[1] This challenge is of deep concern to the ILO, given the emphasis on "fostering sustainable and inclusive economic growth, full and productive employment, and decent work for all". Fatal workplace accidents account for 6.71% of all global deaths. To provide a comparison, in 2019, the number of work-related fatalities was more than double that of deaths caused by road traffic injuries (ILO, 2023a). Italy is a notable case due to its prevalence of fatal workplace accidents, accounting for approximately 1,200 deaths annually. According to the latest data from Eurostat (2023) referred to the year 2021, Italy reported a rate of 2.7 fatal accidents at work per 100,000 workers, significantly higher than the European Union average of 1.76.

Reducing workplace accidents is challenging. Moreover, accurate measurement of this phenomenon is essential for prevention, as proper reporting of workplace injuries is crucial in assessing workplace health hazards and implementing informed policies. An unclear understanding of the nature and extent of injuries compromises the long-term health and safety of workers (Probst et al., 2008; Tucker et al., 2014). Yet, the literature indicates evidence that many workplace injuries go unreported. As a matter of fact, firms and workers have strong incentives to misreport. Firms may under-report because of safety incentive programs that discourage proper reporting, poor organizational safety climate, and inconsistent supervisor safety enforcement (Pransky et al., 1999; Probst and Estrada, 2010). Workers, particularly those on temporary contracts, fear repercussions of reporting, e.g., in terms of job loss or non-renewal of contracts (Boone et al., 2011; Picchio and Van Ours, 2017). This behavior increases during economic instability, where high unemployment rates can further discourage workers from reporting accidents (Palali and van Ours, 2017; Davies et al., 2009). Moreover, financial incentives are crucial in this context (Mazzolini, 2020). For instance, Meyer et al. (1995) demonstrate that higher workers' compensation benefits not only incentivize employees to extend the duration of their injury claims but may also lead to an increase in the number of claims filed, particularly for non-severe accidents.

In this paper, I use an administrative dataset provided by INAIL (the Italian National Institute for Insurance against Accidents at Work) covering years from 2014 to 2019 to evaluate the under-reporting of work-related injuries.[2] I exploit the news of the occurrence of fatal workplace

[1] Eurostat defines workplace accidents as "a discrete occurrence during work which leads to physical or mental harm." This encompasses road traffic incidents transpiring during a worker's shift and commuting accidents as workplace incidents.

[2] In Italy, the National Institute for Insurance against Accidents at Work (INAIL) is the statutory body responsible for overseeing workplace safety and compensating workers for work-related accidents and occupational diseases. INAIL operates under the supervision of the Ministry of Labour and Social Policies and covers all workers in Italy, except specific categories (Carabinieri, police officers, and firefighters). Enrollment in INAIL is mandatory for employers, which ensures that *in principle*, all workplace injuries are

accidents as an exogenous shock to investigate its effect on the reporting behavior of injuries.[3]. This treatment is province and sector-specific, turning on and off over time, which makes it non-absorbing and staggered. To address this issue, I apply the estimator proposed by Imai et al. (2023), designed to handle such dynamic treatment regimes in a difference-in-differences framework.

Three main results emerge from this study. First, the news of a fatal workplace accident leads to an approximately 4.3% increase in reporting of non-severe injuries in the week of the accident and a further 6.1% increase in the following week. This indicates that, under normal conditions, a substantial portion of non-severe injuries remains unreported. The observed rise in reporting suggests that such events disrupt usual reporting behaviors, prompting workers and firms to document injuries that might previously go unnoticed or unacknowledged and to close the gap between the actual and reported rates of accidents. Second, using Google Trends data as a proxy for national media attention, I find that media coverage is important in maintaining increased reporting over time. The sustained public visibility of workplace accidents likely puts pressure on both firms and workers to closely adhere to reporting standards. This finding points to the broader role of media in influencing workplace practices and reinforcing transparency. Third, the decomposition of the ATT by unionization levels reveals a stronger effect of fatal accident news in provinces with higher union membership. This suggests that unions amplify the catalytic effect of the news by improving an environment where workers feel more secure in reporting injuries. As a matter of fact, sectors in provinces with higher union enrollment show a larger magnitude of the difference-in-difference estimator and a more persistent effect, indicating that a stronger union presence improves reporting accuracy and strengthens the connection between workplace safety and reporting practices.

This paper is mainly related to the literature on workplace injury reporting behavior. The findings expand on previous research documenting the under-reporting of workplace injuries and organizational, institutional, and individual factors perpetuating this issue, such as inadequate safety cultures and fear of retaliation among workers (Probst and Estrada, 2010; Probst et al., 2013). Moreover, it further investigates the role of unions in workers reporting behavior (Donado, 2015; Dean et al., 2023).

The paper is structured as follows. Section 2 presents the institutional setting, context, and previous relevant literature. Section 3 describes the data used for the analysis and provides background information on workplace accidents in Italy. Section 4 outlines the empirical strategy. Section 5 presents the main findings. Sections 6 and 7 discuss the results and conclude.

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systematically recorded (Depalo, 2023).

[3]From now on, "news" refers not to formal media coverage but to the event of a fatal workplace accident itself. I hypothesize that the news of workplace fatality spreads organically within the local community or workplace through informal channels, such as word of mouth, internal communication, or safety reports, which can trigger increased attention to safety and reporting behavior.

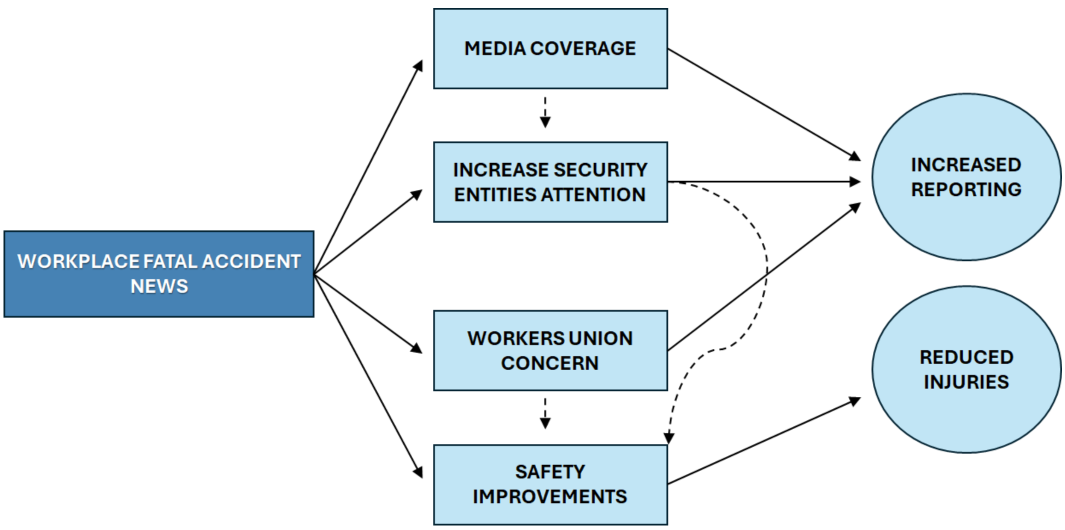
2 Context and Institutional Setting

Workplace safety is a critical issue that requires continuous attention from regulatory bodies, policymakers, and workers. Italy, as well as other developed countries, has created an institutional framework designed to mitigate the risks associated with workplace accidents. This framework includes two primary institutions: INAIL, responsible for workplace accidents and occupational diseases, and INPS (National Social Insurance Agency), which provides general social security benefits such as standard sick leave payments. While the functions of these institutions are distinct, they serve complementary roles in protecting workers' welfare and ensuring that risks associated with the workplace are adequately managed. The role of INAIL focuses on accident prevention, risk mitigation, and providing compensation for work-related injuries. Employers are legally required to pay annual premiums to INAIL, and the size of these premiums depends on the risk level of their industry. INAIL's role also extends to promoting safety practices and overseeing the reintegration of injured workers into the labor force. A critical theme of this regulatory framework is that should an employee sustain an injury or die due to a workplace accident, the employer must report the incident to INAIL. Failure to do so could result in legal consequences, including administrative penalties or criminal charges in cases of serious negligence. Severe injuries, which can result in long-term disability or death, generally trigger immediate medical attention and legal procedures, and INAIL provides compensation for such injuries, categorized based on the degree of impairment to the worker's psychophysical integrity. For example, when an injury results in a permanent impairment of 16% or more, INAIL provides a disability pension based on the extent of the injury (INAIL, 2023). In such a framework, the distinction between severe and non-severe injuries is important, as severe injuries are less likely to be under-reported. For example, a severely injured worker would require emergency treatment, ensuring the incident is documented. In contrast, non-severe injuries, like minor cuts or strains, are more prone to under-reporting, either because workers may not view them as serious or fear repercussions from their employer, particularly if the injury only needs basic first aid (Tucker et al., 2014). In this paper, I distinguish between severe and non-severe workplace injuries, exploiting the INAIL classification. I define severe injuries as those that result in any degree of permanent impairment, starting from a minimum of 1% impairment, according to INAIL's classification system. Non-severe injuries include all other injuries that do not meet this threshold and typically do not lead to long-term physical consequences or require substantial medical treatment.

The injury incidence rate is influenced by multiple factors beyond the simple safety programs. For instance, Bertoli and Grembi (2024) highlight the impact of cultural and religious attitudes, Drescher and Janzen (2025) and Filomena and Picchio (2024) examine the role of weather conditions and Curci et al. (2023) the role of air pollution, and Depalo (2023) investigates the effects of daylight saving time changes. Additionally, Asfaw et al. (2011); Davies et al. (2009) argue that the rate of reported workplace accidents is closely tied to the economic cycle. Studies indicate a tendency to under-report workplace accidents during periods of high unemployment and adverse economic conditions, as increased fears of job loss and job insecurity discourage workers from reporting accidents (Palali and van Ours, 2017; Probst et al., 2013; Probst and Estrada, 2010). These fears are not unfounded, as workers who report accidents have been shown to face a higher likelihood of being fired later on (Boone et al., 2011). Changes in reported injury rates can also be partly attributed to workers' behavior (Boone and Van Ours, 2006): for example, workers on temporary contracts are more prone to under-reporting accidents (Picchio and Van Ours, 2017), probably due to fear of missing a contract renewal. On the other hand, temporary contract workers may also tend to exert more effort on the job to improve their chances of rehiring while receiving lower investments in specific human capital compared to their colleagues on permanent contracts, which increases their risk of injury (Guadalupe, 2003). Among the other reasons to under-report, Tucker et al. (2014) argues that workers justify under-reporting their injuries to superiors by citing perceived low severity, concerns about adverse reactions from employers, and ambiguity over whether the injury was work-related. Additionally, vulnerable workers, such as low-wage employees and minorities, encounter more barriers in reporting injuries or illnesses (Kyung et al., 2023).

Ideally, the news of a fatal workplace accident should trigger different channels and mechanisms affecting the reported and the actual rate of injuries. Figure 1 illustrates the potential pathways through which the news of a fatal accident can influence these outcomes. The incident can raise public awareness on the workers' side, encouraging unions to advocate for better working

Figure 1: Potential Impact of a Workplace Fatal Accident on Reporting Behavior and Injury Rates



Note: This diagram shows the pathways through which the news of a workplace fatal accident can influence both injury reporting and injury rates. Media coverage, union concerns, and increased oversight by regulatory bodies may contribute to increased reporting, while safety improvements may reduce actual injury rates.

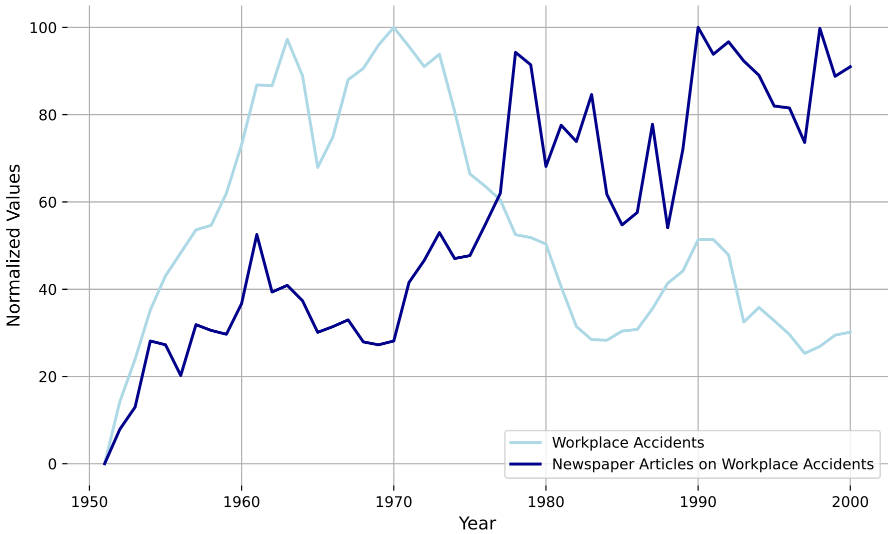
conditions and pushing workers to report injuries more diligently. For example, unions can be instrumental in providing protection, ensuring workers feel safe reporting injuries without fearing retaliation. On the employers' side, public attention can pressure firms to address workplace hazards, leading to immediate safety protocol changes, equipment investment, or safety training initiatives. This pressure can arise either voluntarily or as a response to external scrutiny. Moreover, media amplification sustains public and institutional awareness, increasing pressure on firms and regulatory bodies, such as INAIL, to take effective actions. This can also prompt more rigorous internal oversight, even in the absence of formal investigations. As regulatory bodies become involved, they may enforce stricter compliance with safety regulations, further improving both the actual rate of injuries and the precision of reporting.

Media attention does more than highlight individual accidents. It amplifies societal concerns and holds firms and institutions accountable. As shown in Figure 2, the long-term trends in workplace accidents and media coverage provide insights into this dynamic. While workplace accidents in Italy peak in the early 1960s, media attention rises throughout the 1970s, reflecting a growing public discourse on workplace safety. Increased media attention can contribute to raising awareness and mobilizing public opinion, even as safety regulations and technological advancements lead to fewer incidents. The scrutiny brought by media coverage encourages workers and employers to pay closer attention to safety practices, driving up reporting rates. Other studies such as Colagrossi et al. (2023) and Gulino and Masera (2023) show similar effects in contexts such as domestic violence and crime reporting, where heightened media attention significantly impacts reporting behavior.

One other potential mechanism is to be searched in workers' union activity. In principle, unions are crucial in promoting workplace health and safety, influencing regulations and legislation (Johansson and Partanen, 2002). For example, Li et al. (2022) investigate the effects of labor unions on workplace safety, finding mixed results: while unionization does not significantly affect overall accident rates, it can reduce the number of cases in the lower end of the distribution. Donado (2015) shows that unionized workers report more non-fatal injuries than their non-unionized peers. This does not necessarily indicate worse safety conditions in unionized workplaces but rather that unions foster transparency and encourage the reporting of injuries. Unionized workers may feel more secure in reporting even minor injuries without fear of retaliation, which results in higher recorded rates of non-severe incidents. For instance, Davies et al. (2009) link minor injuries to variables proxying for workers' bargaining power. However, Donado (2015) finds limited evidence that unionization reduces the occurrence of severe injuries, suggesting that unions primarily impact injury reporting practices rather than actual injury prevention. Moreover, Dean et al. (2023) show that higher union presence increases the likelihood that unionized nursing homes report workplace injuries and illnesses to OSHA (Occupational Safety and Health Administration) compared to non-unionized facilities. On the other hand, in the U.S., unionized establishments are more likely to receive safety inspections, face greater scrutiny, and pay higher penalties than non-union workplaces (Weil, 1991), which can encourage more precise and punctual reporting.

Literature highlights how media coverage and, especially, union presence influence workplace accident reporting and broader safety trends. Understanding the roles of institutions, media, and

Figure 2: Normalized Time Series of Reported Workplace Accidents and Newspaper Articles (1951-2000)



Note: The figure presents two time series, normalized on a scale from 0 to 100, for 1951-2000. The first series (light blue) is the number of reported workplace accidents from INAIL, and the second (dark blue) shows the number of newspaper articles from the "La Stampa" archive citing "workplace accidents." The normalization sets 100 as the peak year for each series.

unions is crucial to addressing the challenges in improving safety practices and accurately assessing workplace hazards. This paper fills a gap in the literature by demonstrating the discrepancy between actual and reported accident rates and emphasizing how media and unions can contribute to reducing this reporting gap.

3 Data

The data used in this paper is from (i) INAIL, (ii) Google Trends, (iii) the Italian workers' union, and (iv) the Italian National Statistics Institute (ISTAT).

The primary source of data is the INAIL. This event dataset includes all the reported workplace injuries in Italy from 2014 to 2019. Each injury episode includes unique identifiers for each firm and worker, worker characteristics (gender, age, and nationality), and the geographical location at the province level. Additionally, it details the accident's severity, categorized by the level of disability recognized by INAIL. Moreover, INAIL data includes the economic sector (using the ATECO, which is the Italian classification for economic activities, equivalent to the NACE code).[4] Consistent with previous literature, I exclude non-fatal "in itinere" accidents, which occur during the commute to and from the workplace and are covered by Italian insurance. Given the impact of the COVID-19 pandemic on reported injuries, I exclude the years from 2020 as some COVID-related deaths and injuries are considered work accidents. I aggregate the injury data at the weekly level for each economic sector-province pair from 2014 to 2019, calculating the number of injuries reported per 100,000 workers in each sector. The number of workers in these sectors is sourced from ISTAT's dataset at the provincial economic sector level (1-digit).[5]

Table 1 displays the main statistics over the sample period 2014 - 2019. The final sample consists of 560,976 observations, with 1,798 units (sector $\times$ province) observed over 312 weeks (from 2014 to 2019). The total incidents per 100,000 workers averages 49.15, with a large standard deviation (201.84), indicating significant variation across provinces and sectors. Severe incidents are less frequent, averaging 8.53 per 100,000 workers, while non-severe incidents are more common (40.62). Additionally, incidents involving male workers (30.09 per 100,000) are more frequent than those involving female workers (10.53 per 100,000). Only a small proportion of incidents involve non-Italian workers (5.92 per 100,000), reflecting their lower presence in the Italian workforce.

[4] Note that not all injuries are consistently recorded within a specific sector in the INAIL records. However, as shown in Table A.4 in the Appendix, the data display a consistent trend across sectors from 2014 to 2019. Although a portion of injuries are not assigned to a specific sector and are excluded from the analysis, the results do not show any irregular or abrupt changes in the number of injuries across sectors over time. This suggests that the overall trends in workplace accidents remain stable and reliable for analysis, and excluding unclassified injuries does not affect the general patterns observed.

[5] ISTAT excludes certain economic activities from this data collection. Sectors not included are agriculture, forestry, and fishing (section A of NACE Rev.2); public administration and defense; compulsory social security (section O); activities of membership organizations (division 94); activities of households as employers of domestic personnel; undifferentiated goods- and services-producing activities of households for own use (section T); and activities of extraterritorial organizations and bodies (section U); as well as units classified as public and non-profit institutions. The final sample includes all ATECO sectors (17 in total), if present in each province, and excludes the abovementioned sectors due to their absence in ISTAT data.

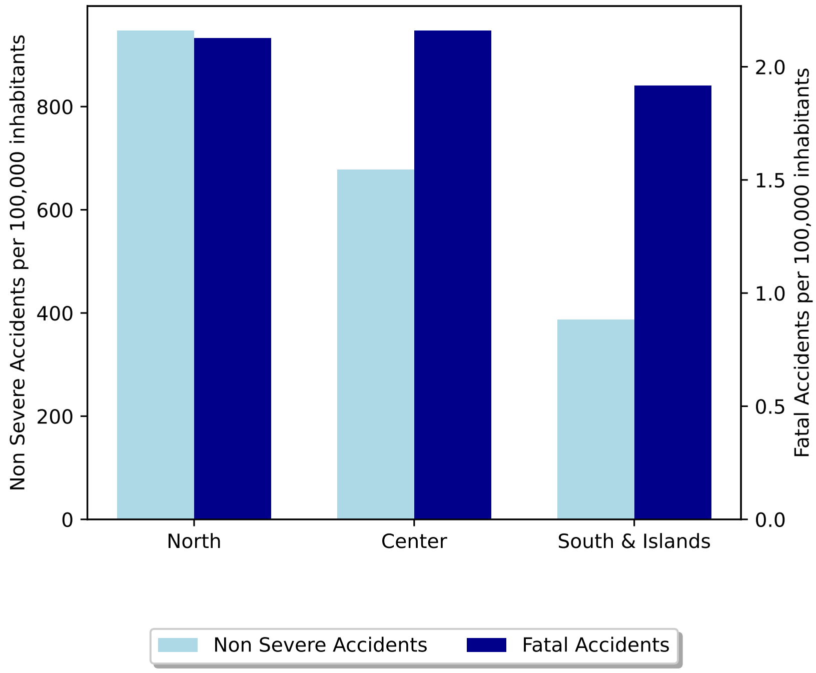
Table 1: Descriptive Statistics

Variable	Mean	SD	Min	Max
Weekly incidents per 100,000 workers:				
Total	49.152	201.839	0	25,000
Severe	8.529	94.982	0	25,000
Non Severe	40.622	173.695	0	16,949
Italians (non-severe)	34.706	158.973	0	16,949
Foreigners (non-severe)	5.916	67.92	0	16,949
Male (non-severe)	30.091	168.178	0	16,949
Female (non severe)	10.532	38.784	0	6,269
Absolute number of weekly incidents:				
Total	3.267	7.444	0	121
Severe	0.499	1.219	0	24
Non Severe	2.768	6.516	0	110
Italians (non-severe)	2.246	5.131	0	86
Foreigners (non-severe)	0.522	1.754	0	41
Male (non-severe)	2.007	5.32	0	103
Female (non-severe)	0.761	2.065	0	53
Other variables:				
Workers Unions participation per capita	0.046	0.016	0.022	0.091
Treated Units	0.560	0.496	0	1
Units (Sector x Prov)	1,798	-	-	-
Economic Sectors	17	-	-	-
Italian Provinces	106	-	-	-
Observations	560,976	-	-	-

Note: Injuries data in the first rows are weekly and per 100,000 workers. Sources are INAIL (workplace accidents), ISTAT (number of workers per province and ATECO sector). All data cover the years 2014–2019.

Figure 3 shows the yearly average number of non-severe and fatal workplace accidents per 100,000 inhabitants across Italian macro-regions (North, Center, South & Islands) from 2014 to 2019. Non-severe accidents are more concentrated in northern and central regions, historically hubs of industrial activity. In contrast, fatal accidents show a more uniform distribution across all macro-regions. One possible explanation for this pattern is that southern Italy may be more exposed to underreporting. Second, unionization data show that southern regions are, on average, less unionized.

Figure 3: Average yearly number of non-severe and fatal workplace accidents per 100,000 inhabitants (2014-2019).

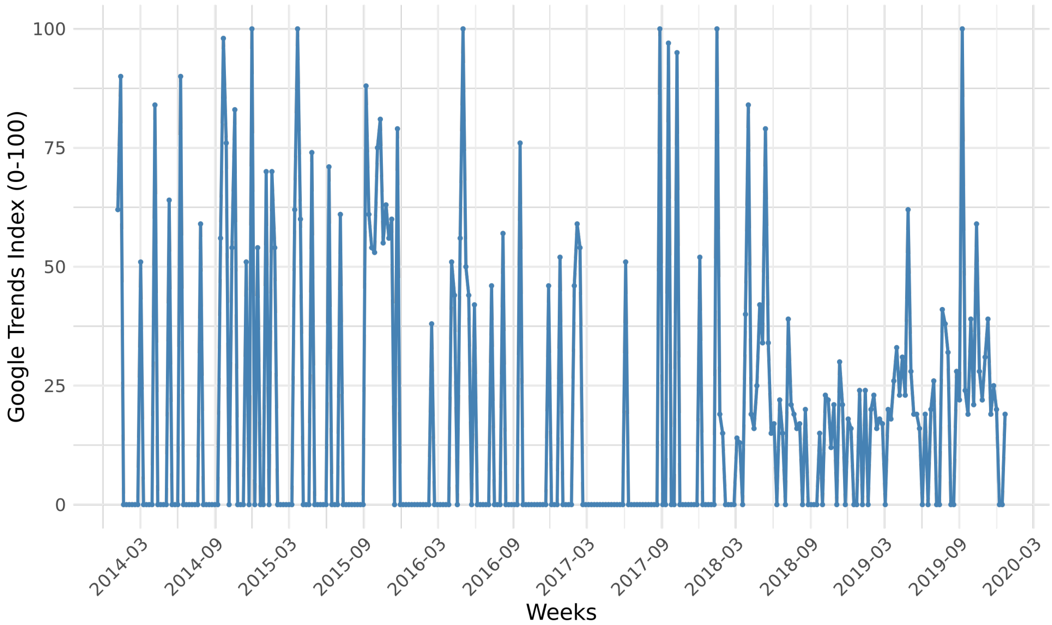


Note: The figure displays the average yearly number of non-severe and fatal workplace accidents per 100,000 inhabitants, grouped by macro-regions (North, Center, South & Islands), from 2014 to 2019. The distribution suggests potential underreporting of non-severe accidents in southern regions. Source: INAIL.

I leverage Google Trends data on weekly searches using the keyword "victims of workplace accidents" from 2014 to 2019. Figure 4 shows the time series of the data on media coverage. This keyword is classified as an "argument" in Google Trends, which means it is more consistent over time compared to other keywords such as "work-related deaths," "workplace accidents," and similar word combinations. This data helps determine periods (weeks) of high or low public attention on workplace accidents.[6]

[6] Google Trends assigns an index value between 0 and 100 to the relative popularity of search queries over a specific period of time. A value of 100 represents the peak popularity of the search term, while a value of 0 indicates that there was insufficient data for that particular week. The data is normalized, meaning that it reflects relative popularity rather than the absolute number of searches. Consequently, this allows for the comparison of public interest in different time periods, but it does not provide the exact number of searches.

Figure 4: Google Trends data - "victims of workplace accidents"



Note: Google search index available at https://trends.google.com/trends/ for the argument "victims of workplace accidents", in italian "Caduti del lavoro". The index ranges between 0 and 100.

Last, I leverage data from the CGIL website (Confederazione Generale Italiana del Lavoro), which is the largest Italian workers' union.[7] CGIL is also the only major Italian union that provides publicly available data at the provincial level. This workers' union represents around 5.1 million workers (CGIL, 2024), making it the largest union in Italy, followed by CISL with 4.1 million members (CISL, 2024) and UIL with 2.3 million members (UIL, 2023).

Although the data used in this analysis focus solely on CGIL, trends in union membership over recent years are similar across the three largest unions in Italy.[8]. For this paper, I focus on 2014 to classify the sample based on varying levels of union enrollment, corresponding to the first year of observation in the panel used in this study. Using only the first year avoids potential measurement bias caused by workers joining unions in response to high rates of workplace accidents. The data on unionization reveal significant regional disparities, with lower enrollment rates in the South compared to the more industrialized North. The share of the population enrolled in CGIL is 4.74% in the North, 4.83% in the Center, and 3.71% in the South and Islands.

[7]Data available at https://www.cgil.it/tesseramento.

[8]For additional details see a recent newspaper comparison: https://www.youtrend.it/2021/06/22/il-peso-dei-sindacati-e-degli-scioperi-in-italia/

4 Model and Empirical Strategy

4.1 The Causal Quantity of Interest

The key aim of this study is to estimate how and if the news of a fatal workplace accident affects the reporting behavior of injuries. Specifically, I aim to measure the change in the number of reported injuries per 100,000 workers after the occurrence of such an event at the provincial sector unit. To capture this effect, I focus on the ATT, i.e. how the reporting behavior changes for those sectors that experienced a fatal accident compared to what would have happened if they had not the news of the fatal accident. It means comparing the actual injury reports after fatal accident news with an estimate of what the reports would have looked like in the absence of such news. The ATT is defined as:

$$\begin{aligned}\delta(F, L) = E\left[Y_{i,t+F}(X_{it} = 1, X_{i,t-1} = 0) \mid X_{it} = 1, X_{i,t-1} = 0\right] \cdots \\ -E\left[Y_{i,t+F}(X_{it} = 0, X_{i,t-1} = 0) \mid X_{it} = 1, X_{i,t-1} = 0\right]\end{aligned} \quad (1)$$

In this formulation, X_{it} is a binary variable indicating whether unit i (a sector-province pair) is treated at time t (i.e., exposed to the news of a fatal accident), and $Y_{i,t+F}$ is the outcome variable, representing the number of reported injuries F periods after the treatment. The first term is the expected number of reported injuries F periods after the treatment, conditional on the unit being treated at time t and not treated at time $t-1$, while the second term is the counterfactual scenario (the expected number of injuries in the absence of treatment, again for units treated at t but untreated at $t-1$). Finally, $\delta(F, L)$ measures the average causal effect of the treatment on the treated units, isolating the impact of the news of a fatal workplace accident on the reporting behavior. To estimate the causal impact of the news of a fatal work-related accident on reported injuries, I rely on the approach recently proposed by Imai et al. (2023). This estimator is particularly flexible and appropriate for cases like this one because the treatment, defined as the news of a fatal accident on a particular week in a sector of a province, can switch on and off over time for the same unit (meaning it does not necessarily require being an absorbing state). Additionally, the estimator allows for staggered treatment in time, a significant concern in recent developments in the differences-in-differences econometric literature (Roth et al., 2023).

4.2 The Exposure to the Treatment

The treatment is week, province, and sector-specific, meaning that for each combination of these three variables, the Imai et al. (2023) routine identifies a set of untreated units for that specific week. This ensures that the time series for treated and control groups are comparable, preventing pre-existing differences from driving the estimated effects. Aggregation plays a crucial role in this context, as it directly influences the number of untreated units available for comparison, which is critical to robust identification. Figure A.1 in the Appendix visualizes the distribution of treatment across units and time. The y-axis represents the units (provinces, economic sectors, or provincial economic sectors), and the x-axis displays the weeks from 2014 to 2019. Blue areas indicate weeks when the news of a fatal workplace accident occurred (treated weeks), while white areas represent weeks without such news (untreated weeks). The first figure (Figure A.1a) shows the treatment distribution for economic sectors. While sector-level aggregation captures sectoral trends, it does not account for regional differences, and importantly, it reveals that very few sectors remain untreated for the entire period (i.e., there are few "never treated" units). This limits the ability to compare treated units to similar, never-treated units, thereby complicating the identification of treatment effects. The second figure (Figure A.1b) presents the treatment distribution at the provincial level. Although this level of aggregation reduces the number of treatments per unit compared to sector-level aggregation, it still does not provide enough untreated units over time. This can be observed in the graph, where many provinces are treated at some point during the period, resulting in a limited number of provinces that are never treated. Finally, the third figure (Figure A.1c) combines provinces with sectors (Province × Sector, 1-digit level), which results in a more granular approach. This disaggregation increases the number of units, providing a much higher number of "never treated" or "not yet treated" units. This finer level of aggregation is essential for creating a larger pool of untreated weeks, thus improving the robustness of the identification strategy. It allows for more accurate comparisons between treated and control units by ensuring enough untreated units are available for each period.

4.3 Step 1: Matching

The two-step procedure proposed by Imai et al. (2023) begins with matching the units of observation (sector × province) between treated and control groups. Specifically, units with similar dynamics in the outcome variable (number of injuries per 100,000 workers) and treatment histories in the three weeks before the treatment are matched, minimizing the Mahalanobis distance. The majority of the matched sets have a large number of control units, with a mean length of 1,600 and a maximum of 1,765. This indicates that a substantial pool of matched control units was available for most treatment events. Only 12 treatment switches result in an empty matched set. The median matched set size is 1,734, and the 1st and 3rd quartiles are closely clustered around this value, showing a consistent matching performance across different units and periods.

4.4 Step 2: Difference-in-Differences Estimator

After the matching step, the second part of the Imai et al. (2023) procedure estimates the ATT using a difference-in-differences approach. This method compares the change in reported injuries before and after treatment for treated units to the change for matched control units over the same period, isolating the causal effect by accounting for time-invariant factors and common trends. The estimator is given by:

$$\delta(F, L) = \frac{1}{\sum_{i=1}^{N} \sum_{t=L+1}^{T-F} D_{it}} \sum_{i=1}^{N} \sum_{t=L+1}^{T-F} D_{it} \cdots \left\{ (Y_{i,t+F} - Y_{i,t-1}) - \sum_{i' \in M_{it}} w_{i'it} \left(Y_{i',t+F} - Y_{i',t-1} \right) \right\} \tag{2}$$

This estimator is algebraically equivalent to a weighted two-way fixed effects model (Imai et al., 2023). The term D_{it} selects treated units that transition from untreated to treated status between $t-1$ and t, ensuring they have at least one matched control:

$$D_{it} = X_{it}(1 - X_{i,t-1}) \cdot 1_{\{|M_{it}|>0\}} \tag{3}$$

where X_{it} is the treatment indicator and M_{it} is the set of matched control units for treated unit i at time t. The parameter L defines the lagged periods used to ensure comparable pre-treatment trends. The term in the equation, $Y_{i,t+F} - Y_{i,t-1}$, measures the observed change in reported injuries for treated units, while F represents the post-treatment period. The second term is the weighted average change for matched controls, serving as the counterfactual. Their difference isolates the treatment effect, and the denominator normalizes by the number of treated units with matched controls, yielding the ATT. The weights $w_{i'it}$ are normalized such that $\sum_{i' \in M_{it}} w_{i'it} = 1$. This approach guarantees that the estimated ATT accounts for common trends while controlling for time-invariant unobserved heterogeneity.
This approach reduces model dependence and enhances causal identification by leveraging matching before applying the difference-in-differences estimator. The normalization in the denominator ensures that the ATT represents an average treatment effect across treated units, making it robust to variations in treatment intensity across time and units.

5 Results

The main results are presented in Table 2. Column 1 shows the effect of news of fatal workplace accidents on the number of injuries reported per 100,000 workers. No statistically significant effect is found when considering the total number of injuries per 100,000 workers as the outcome variable. This suggests that the immediate impact of news about fatal accidents does not translate into a measurable change in the overall reporting of injuries. However, this aggregate result might mask heterogeneous effects across different types of injuries. The reporting behavior could differ depending on the severity of the accident, as minor injuries are more susceptible to underreporting compared to severe ones.

To explore the heterogeneity of the impact, I decompose workplace accidents into two levels of severity, severe and non-severe injuries, based on the INAIL classification, as described in Section 2.[9] Figure 5 and column 2 in Table 2 show the effect of the news of a fatal workplace accident

[9] Workplace accidents occurring in the same firm on the same day of the fatal workplace accident are

Table 2: Effect of a workplace fatal accident news on reported injuries.

Time	(1) Total Injuries	(2) Non Severe Injuries	(3) Severe Injuries
pre-treatment period			
t-3	1.208	0.555	0.743
	(1.334)	(0.796)	(1.147)
t-2	1.277	0.538	0.799
	(1.351)	(0.838)	(1.146)
post-treatment period			
t	1.348	1.746*	0.195
	(1.430)	(0.919)	(1.108)
t+1	1.642	2.480***	-0.283
	(1.329)	(0.776)	(1.103)
t+2	0.507	0.917	-0.274
	(1.358)	(0.857)	(1.117)
t+3	0.835	1.503*	-0.043
	(1.435)	(0.894)	(1.105)
t+4	1.066	1.622*	-0.285
	(1.421)	(0.897)	(1.115)
Obs.	560,976	560,976	560,976
Avg. Outcome	49.15	40.62	8.52

Note: The table presents the effect of news about a fatal workplace accident on reported injuries, estimated using the procedure from Imai et al. (2023) in R Studio. The baseline period is $t-1$, defined as the week preceding the accident. The dependent variable represents the number of reported injuries per 100,000 workers. Columns (1), (2), and (3) show the results for total injuries, non severe injuries, severe injuries, respectively. Standard errors are shown in parentheses. Statistical significance is indicated as follows: *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$. Treated and control units are matched using the Mahalanobis distance, calculated based on treatment and outcome histories during the three weeks prior to the fatal accident news.

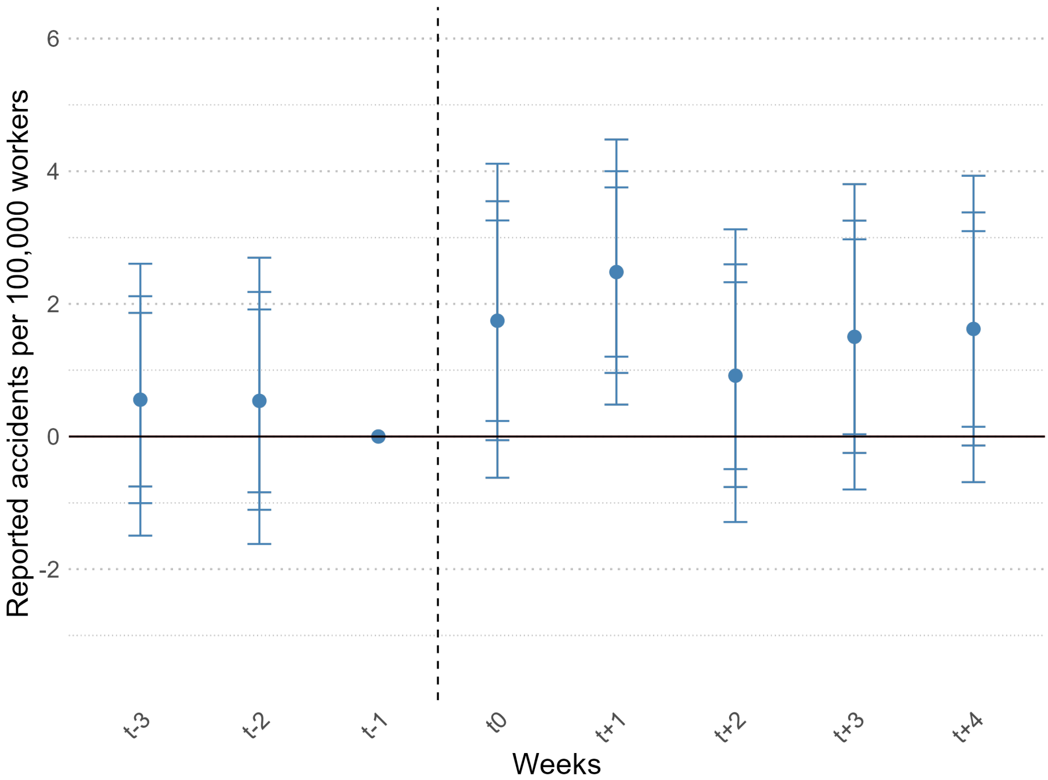
on the reporting of non-severe accidents. This effect corresponds to an increase of 1.75 accidents per 100,000 workers in the same week of the fatal accident news and 2.48 in the following week. Given the average weekly reporting of non-severe accidents, which is 40.62, this represents a 4.3% increase in the week of the fatal workplace accident news and a 6.1% rise the following week. These findings strongly suggest the presence of underreporting before the fatal accident, as the increased attention surrounding the incident appears to trigger a spike in injury reporting. In addition, there is no reason to believe that this effect is driven by the actual rate of accidents, i.e., workers are getting injured more after the news of fatal workplace accidents. On the other hand, what is plausible

excluded from the analysis, given the nature of these episodes. The number of dropped injuries is negligible and accounts for 7,909 observations.

is that workers and firms are reporting more workplace accidents. Reassuringly, the coefficients show no significant differences between treated and control groups in the pre-treatment period, supporting the parallel trends assumption and strengthening the validity of the results.

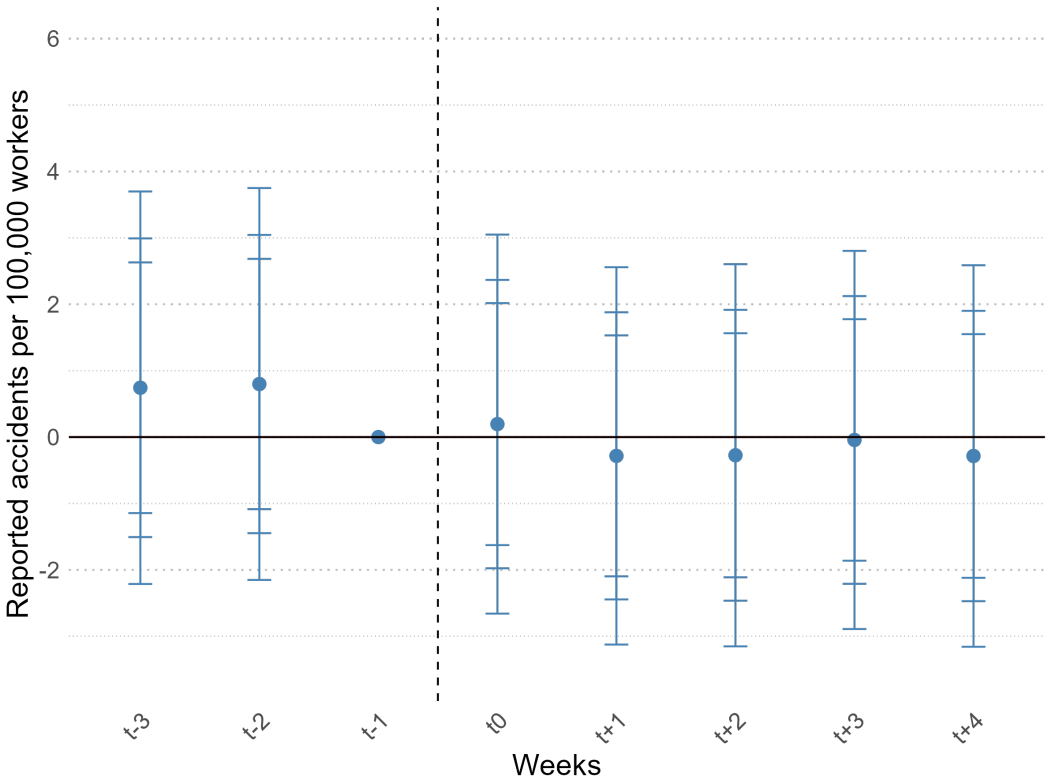
To further address concerns about spurious correlations and ensure that the observed effects are not due to changes in workplace hazards, I conduct a placebo test using the number of reported severe accidents per 100,000 workers as the outcome. Severe accidents are less likely to be under-reported, so they are a reliable benchmark. Figure 6 and Table 2, column 3 show no statistically significant effect for severe accidents. This reinforces the interpretation that the observed effects

Figure 5: ATT in time of a workplace fatal accident news on reporting of non-severe injuries.



Note: The figure illustrates the effect of workplace fatal accident news on the weekly number of non-severe injuries reported per 100,000 workers. The ATT is estimated using the procedure by Imai et al. (2023), implemented via the PanelMatch package in R. Treated and control units are matched using the Mahalanobis distance, calculated based on treatment and outcome histories during the three weeks prior to the fatal accident news. The plot displays the estimated coefficients alongside their respective 99%, 95%, and 90% confidence intervals.

Figure 6: ATT in time of a workplace fatal accident news on reporting of severe injuries.



Note: The figure shows the effect of workplace fatal accident news on the weekly number of reported severe accidents per 100,000 workers. The ATT is estimated using the procedure proposed by Imai et al. (2023) and implemented via the PanelMatch R package. Treated and control units are matched using the Mahalanobis distance, calculated based on both outcome and treatment histories during the three weeks prior to the fatal accident news. The plot displays the estimated coefficients alongside their corresponding 99%, 95%, and 90% confidence intervals.

are specific to non-severe accidents driven by under-reporting rather than actual hazard changes.

The empirical evidence reported in Table 2 shows a positive effect of fatal accident news on reporting behavior, where workers likely begin to report more accidents following the news of a fatal incident. This effect is concentrated on non-severe injuries, which are more prone to under-reporting, as highlighted in previous literature (Kyung et al., 2023). The increase in reported non-severe injuries suggests that fatal accidents act as a catalyst, prompting workers and firms to report more. This increase in reporting narrows the gap between the actual rate of workplace accidents and those reported.

5.1 Media Coverage

In this section, I investigate whether reporting behavior is influenced by media coverage. Media attention to fatal workplace accidents can increase awareness among both workers and employers, potentially leading to a rise in the reporting of workplace injuries. I use the Google Trends index to measure this effect, which captures the frequency of search terms related to specific topics. The index ranges from 0 to 100, and I use weekly data from 2014 to 2019.

Google search data serve as a proxy for media coverage intensity. Higher public interest may put reputational pressure on firms and encourage more transparent injury reporting. To test this, I redefine the treatment to include only those units that experienced a fatal workplace accident in a week where the Google Trends index is above the median (50th percentile), and adding to the matching procedure the original treatment status, i.e., having a fatal workplace accident. This allows to compare units experiencing high media coverage to those with low media coverage but similar treatment paths, analyzing the differential impact of media on injury reporting.[10]

The results, shown in Figure A.2 and Table A.1 in the Appendix, demonstrate that media coverage has a statistically significant impact two weeks after the news of the fatal workplace accident, leading to around a 5.8% increase in the reporting of non-severe injuries. This suggests that media exposure encourages workers to report previously under-reported injuries. However, the immediate effects of media coverage (diff-in-diff estimator for the first two weeks after the news) are not statistically significant, which may indicate that it takes time for the newspaper and media coverage to influence reporting behavior. Additionally, the positive but statistically nonsignificant coefficients three and four weeks after the newspaper coverage suggest that media could have residual effects beyond the accident's immediate aftermath. This pattern points to a gradual increase of safety concerns and reporting behavior rather than an instantaneous reaction.

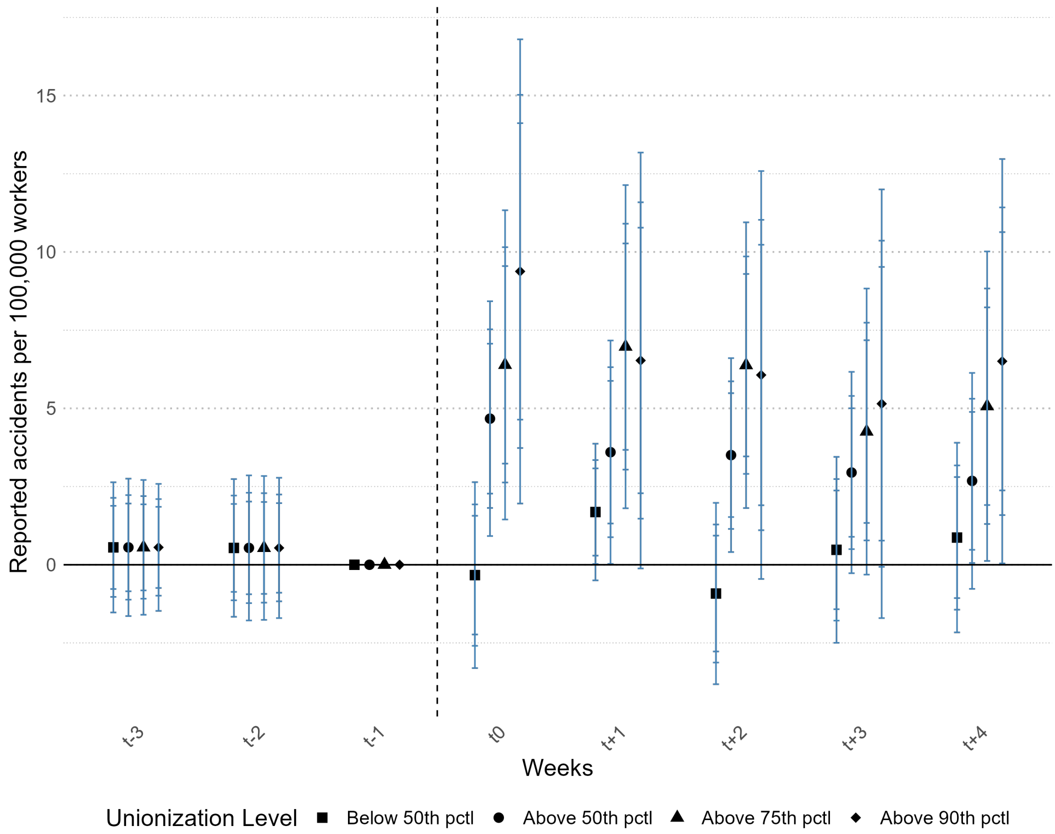
5.2 Workers Union Presence

In this subsection, I examine the heterogeneity in the effect of workplace fatal accident news on the reporting of non-severe injuries, focusing on the influence of workers' unions. Specifically, I use the rate of enrollment in the union as a moderating factor, decomposing the estimated ATT for provinces with union enrollment rates above the median, the 75th percentile, and the 90th percentile. The goal is to assess how the presence of unions affects injury-reporting behavior following a fatal accident. Table A.2 in the Appendix and Figure 7 show the results of this analysis. The coefficients represent the average treatment effect (ATT) of news of a workplace fatal accident on reported injuries across different levels of union enrollment.

The results indicate that in geographical areas where the presence of workers' unions is stronger, the reporting of non-severe injuries following the news of a fatal workplace accident is amplified. In provinces with union enrollment rates above the median (Table A.2, column 2), the effect of

[10] It is important to note that the estimated coefficients represent the differential impact between two units, both of which experienced a fatal accident at time $t = 0$. Still, one had **high media coverage** (above the 50th percentile) during that week. Therefore, the effect observed is the increased reporting in units with high media coverage compared to those with lower media attention.

Figure 7: ATT of workplace fatal accident news on reporting of non-severe injuries by union enrollment rate



Note: The figure illustrates the effect of workplace fatal accident news on the weekly number of reported accidents per 100,000 workers, stratified by union enrollment rate. The ATT is estimated using the method proposed by Imai et al. (2023) and implemented via the PanelMatch R package. Treated and control units are matched using the Mahalanobis distance, calculated based on the outcome and treatment histories during the three weeks prior to the fatal accident news. The plot displays coefficients along with 99%, 95%, and 90% confidence intervals.

the news remains significant up to four weeks after the event. Even if the impact in less unionized provinces still holds (column 1), the magnitude of the effect increases monotonically with higher levels of union enrollment. For example, considering the average outcome (non-severe injuries over workers population) in the subsample, at time $t0$, the effect corresponds to an increase in reporting of about 10% for provinces above the median, 13% for those above the 75th percentile, and 18% for those above the 90th percentile. These numbers show how the solid presence of unions amplifies the impact of the news of fatal workplace accidents on injury-reporting behavior and are consistent with previous literature such as Donado (2015) and Dean et al. (2023) that show that there is an impact of unions on reporting quality of workplace non-severe injuries. As union enrollment increases, so does the magnitudo of the effect, indicating that higher union participation may lead to even greater improvements in reporting accuracy.

In Appendix, Table A.3, I present the decomposition of the ATT using alternative measures of social capital (the percentage of municipal councilors under the age of 40, municipal waste generated per capita). Unlike the analysis of unionization, these alternative measures do not exhibit a clear linear relationship when decomposing the total ATT of fatal workplace accident news on injury reporting across different geographical compositions. This finding suggests that union enrollment rates do not act as proxies for other forms of social capital in this context. Instead, the observed increase in injury reporting can be directly attributed to the presence and influence of workers' unions, emphasizing their role in workers' reporting behavior.

6 Conclusions

Workplace safety is a huge challenge for public health and labor rights, and under-reporting of workplace injuries remains an important barrier to advancing occupational safety standards (ILO, 2023b). Accurate documentation of injuries is essential for identifying hazards and implementing preventive safety measures. However, under-reporting creates critical blind spots, particularly when it comes to non-severe injuries, which are often overlooked despite their importance in predicting and preventing more severe accidents. The systematic failure to capture the full scope of workplace injuries can undermine efforts to build a safer work environment.

This paper provides new evidence on how the news of fatal workplace accidents causally influences the reporting behavior of non-severe injuries. Using administrative data from INAIL, I employ a difference-in-differences design with matching methods to estimate the causal impact of fatal accident news on injury reporting. The analysis reveals a significant increase in reporting: a 4.3% rise in non-severe injury reports during the week of the fatal accident and a 6.1% increase the week after the news. This temporary spike narrows the gap between actual and reported accident rates, suggesting that increased awareness following fatal events can briefly disrupt the patterns of under-reporting

Beyond the direct effects of the accident news, I examine how media coverage amplifies this reporting behavior. The results indicate that media attention can sustain increased injury reporting in time. This supports findings from the literature on media-driven behavioral changes (Colagrossi et al., 2023; Jensen and Oster, 2009), where public attention guided by media has been shown to influence the behavior of economic agents. Moreover, decomposing the ATT by provincial levels of unionization reveals that provinces with higher union membership see significantly greater and longer-lasting changes in reporting behavior. This aligns with prior research emphasizing unions' role in improving safety cultures, protecting workers from retaliation, and promoting transparency (Donado, 2015; Dean et al., 2023).

While these findings point to the importance of external triggers like media coverage and union activity in shaping reporting behavior, the core takeaway is that accurate measurement of workplace injuries is essential for effective policy design. Accurate documentation of workplace injuries is fundamental for understanding labor market dynamics and designing effective occupational safety policies. When the gap between actual workplace conditions and reported data is closed, policymakers can better understand workplace hazards and build targeted and informed interventions. Narrowing this gap is not just about improving the statistical accuracy of reports but also identifying high-risk areas, assessing the effectiveness of safety regulations, and understanding broader trends of health conditions in the labor market. A reliable injury reporting system provides the foundation for analyzing workplace health hazards and improving overall safety standards, ultimately contributing to safer and healthier work environments.

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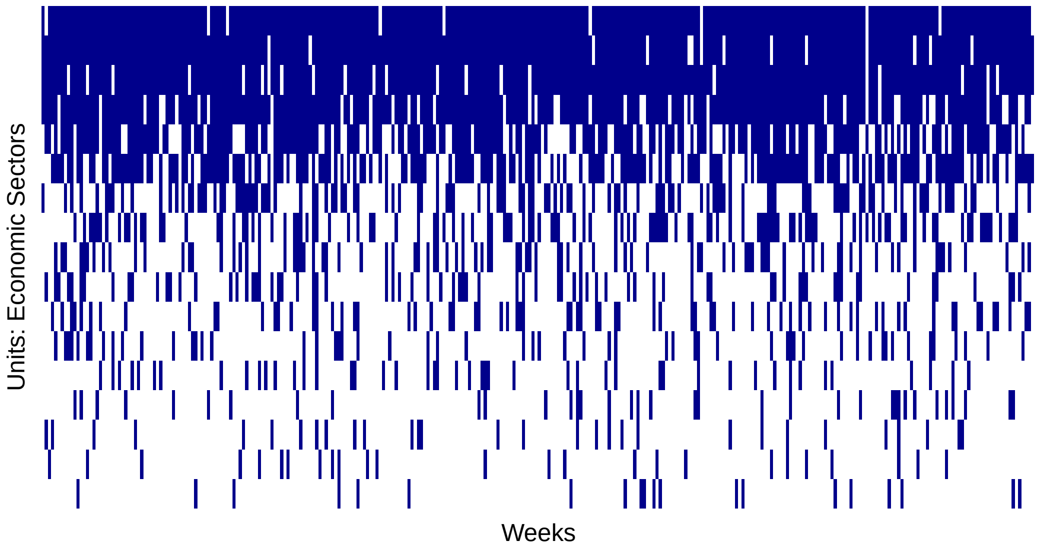
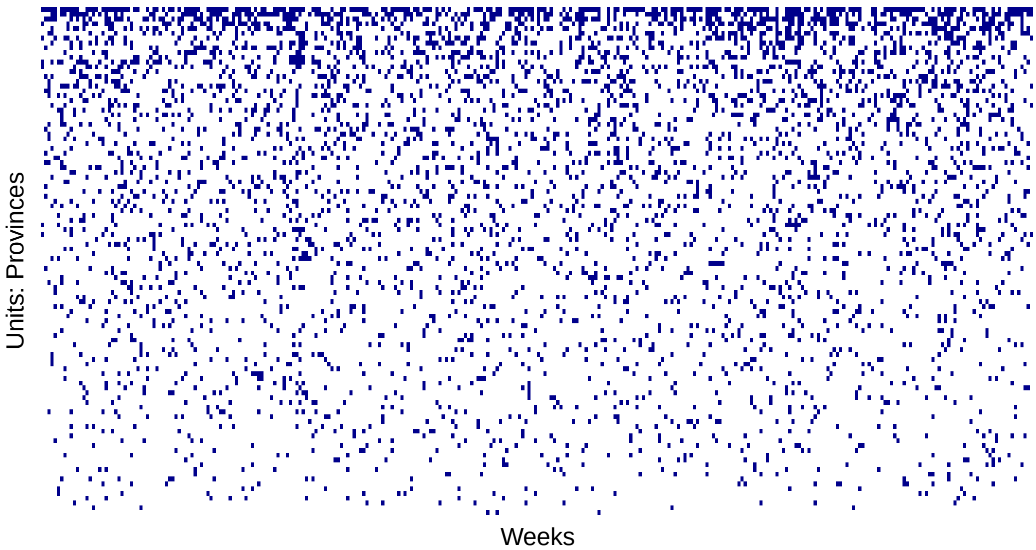
A Appendix

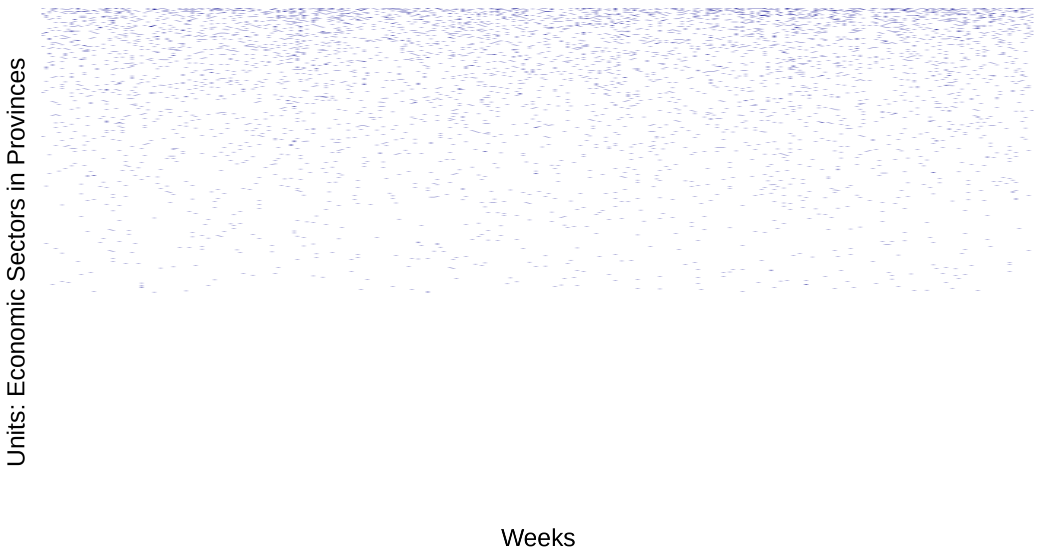
Figure A.1: Comparison of treatment distribution across different levels of unit aggregation.



(a) Treatment Distribution for Economic Sectors



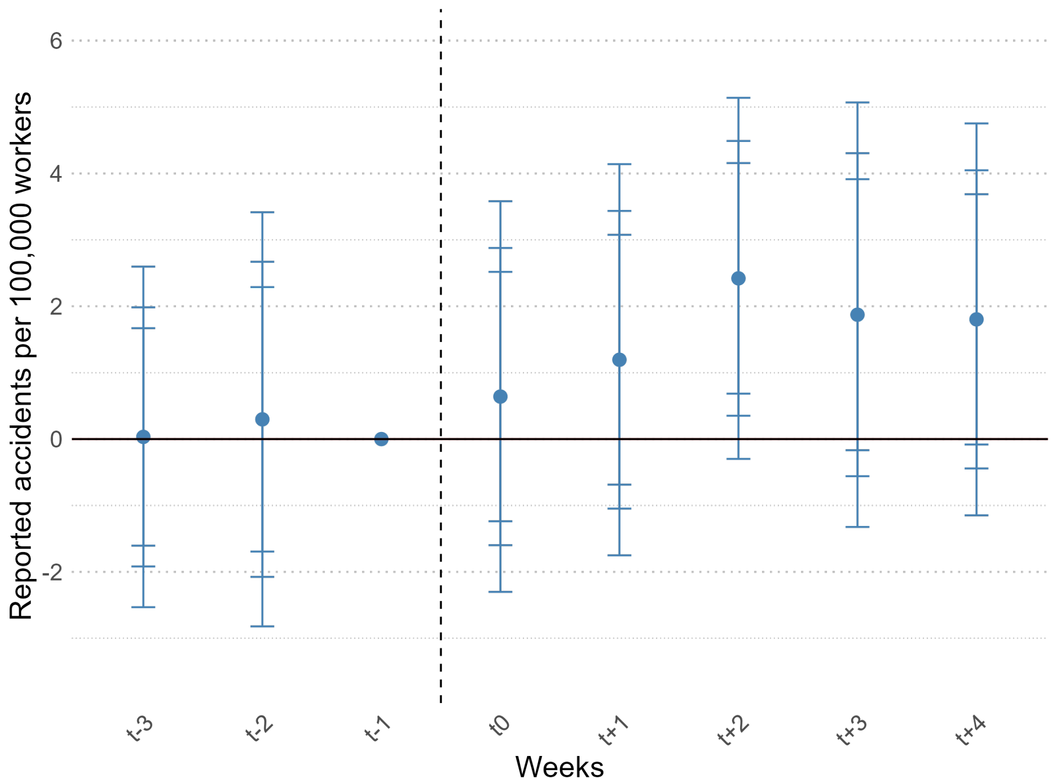
(b) Treatment Distribution for Italian Provinces



(c) Treatment Distribution for Provincial Economic Sectors

Note: The figures above show the distribution of treatment (news of fatal workplace accidents) across three different levels of unit aggregation: economic sectors, provinces, and provinces × sectors. Blue areas represent weeks with treated units, while white areas indicate untreated weeks. These visualizations show how aggregation impacts the frequency of treatment across space and time for different units of aggregation. The rows correspond to the units (economic sectors, provinces, or provinces × sectors) on the y-axis, while the x-axis represents weeks spanning from 2014 to 2019 (312 weeks).

Figure A.2: ATT of workplace fatal accident news on reporting of non-severe injuries, Google interest index >50th percentile



Note: The figure illustrates the effect of workplace fatal accident news on the weekly number of reported non-severe injuries per 100,000 workers, where the Google search index exceeds the 50th percentile. The ATT is estimated using the procedure proposed by Imai et al. (2023) and is implemented via the PanelMatch R package. Treated and control units are matched using the Mahalanobis distance, calculated based on both the outcome and treatment histories during the three weeks prior to the fatal accident news. The plot displays coefficients along with 99%, 95%, and 90% confidence intervals.

Table A.1: Effect of a workplace fatal accident news on reported injuries, media coverage >50%

Time	(1)
pre-treatment period	
t-3	0.033
	(0.995)
t-2	0.297
	(1.210)
post-treatment period	
t	0.640
	(1.142)
t+1	1.195
	(1.143)
t+2	2.420**
	(1.055)
t+3	1.873
	(1.241)
t+4	1.802
	(1.145)
Obs.	560,976

Note: The table presents the differential effect of news about a fatal workplace accident on the weekly number of non-severity injuries per 100,000 workers, with media coverage above the 50th percentile. The ATT is estimated using the procedure proposed by Imai et al. (2023) and is implemented via the PanelMatch R package. Standard errors are reported in parentheses. Statistical significance is denoted as follows: *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$. Treated and control units are matched using the Mahalanobis distance based on treatment and outcome histories from the three weeks prior to the fatal accident news.

Table A.2: Heterogeneity Analysis: Effect of workplace fatal accident news on low severity injuries by provincial unions enrollment rate.

Time	(1) Below Median	(2) Above Median	(3) Above 75%	(4) Above 90%
pre-treatment period				
t-3	0.555	0.555	0.555	0.555
	(0.808)	(0.853)	(0.837)	(0.788)
t-2	0.538	0.538	0.538	0.538
	(0.855)	(0.900)	(0.893)	(0.871)
post-treatment period				
t	-0.332	4.671***	6.391***	9.379***
	(1.154)	(1.457)	(1.919)	(2.881)
t+1	1.685**	3.598***	6.973***	6.531**
	(0.848)	(1.387)	(2.006)	(2.581)
t+2	-0.921	3.506***	6.381***	6.066**
	(1.126)	(1.204)	(1.774)	(2.532)
t+3	0.477	2.948**	4.258**	5.147*
	(1.154)	(1.250)	(1.776)	(2.660)
t+4	0.869	2.681**	5.069***	6.506***
	(1.177)	(1.340)	(1.921)	(2.510)
Obs. considered for the ATT	280,800	280,176	142,584	58,344
Avg. outcome	37.50	43.74	46.95	53.72

Note: The table presents the heterogeneity analysis of the ATT of workplace fatal accident news on the weekly number of non-severe injuries per 100,000 workers, disaggregated by provincial unions enrollment rates. The ATT is estimated using the procedure proposed by Imai et al. (2023) and is implemented via the PanelMatch R package. Model (1) shows the results for provinces with below median CGIL enrollment, Model (2) for provinces above the median, Model (3) for provinces above the 75th percentile, and Model (4) for provinces above the 90th percentile. The baseline period is $t-1$, defined as one week prior to the accident. Standard errors are in parentheses. Statistical significance is denoted as follows: $^{***}\ p < 0.01$, $^{**}\ p < 0.05$, $^{*}\ p < 0.1$. Treated and control units are matched using Mahalanobis distance based on treatment and outcome histories from the three weeks prior to the fatal accident news.

Table A.3: Effect of workplace fatal accident news on low severity injuries: decomposition of the ATT above and below the median for different social capital measures.

Time	**Councilors Under 40**		**Waste per capita**	
	Below Median	Above Median	Below Median	Above Median
	(1)	(2)	(3)	(4)
pre-treatment period				
t-3	0.555	0.555	0.555	0.555
	(0.802)	(0.793)	(0.824)	(0.830)
t-2	0.538	0.538	0.538	0.538
	(0.836)	(0.855)	(0.839)	(0.872)
post-treatment period				
t	1.788	1.691	2.604**	1.060
	(1.261)	(1.231)	(1.254)	(1.189)
t+1	2.753***	2.123*	1.639	3.151***
	(0.965)	(1.256)	(1.183)	(0.952)
t+2	0.665	1.246	-0.229	1.833
	(1.184)	(1.137)	(1.044)	(1.202)
t+3	1.353	1.698	1.404	1.582
	(1.315)	(1.133)	(1.142)	(1.238)
t+4	1.479	1.807	1.739	1.528*
	(1.261)	(1.204)	(1.157)	(1.259)
Obs. considered for the ATT	275,184	285,792	280,488	280,488
Avg. outcome	42.38	38.92	36.64	44.60

Note: The table presents the heterogeneity analysis of the ATT of workplace fatal accident news on the weekly number of non-severe injuries per 100,000 workers. The ATT is estimated using the procedure proposed by Imai et al. (2023) and is implemented via the PanelMatch R package. The ATT is disaggregated by two variables: Municipal Councilors under the age of 40 and Municipal Waste Generated. Model (1) shows the results for provinces with below median Municipal Councilors under the age of 40, and Model (2) for provinces above the median. The percentage of councilors under the age of 40 is calculated as the share of councilors younger than 40 out of the total number of elected municipal administrators, sourced from Istat and based on the Ministry of the Interior's Local Administrators Registry. Model (3) presents the results for provinces with below median Municipal Waste Generated, and Model (4) for provinces above the median. Municipal waste generated is measured in kilograms per inhabitant and is sourced from Istat based on data from ISPRA. Standard errors are in parentheses. Statistical significance is denoted as follows: *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$. Treated and control units are matched using Mahalanobis distance based on treatment and outcome histories from the three weeks prior to the fatal accident news.

Table A.4: Total, Severe, and Non-Severe Injuries by Sector (2014-2019)

Sector	2014	2015	2016	2017	2018	2019
Mining and Quarrying						
Total Injuries	555	470	507	440	461	428
Non-Severe Injuries	413	348	379	327	348	335
Severe Injuries	142	122	128	113	113	93
Manufacturing						
Total Injuries	80,739	77,719	77,582	81,723	87,804	86,683
Non-Severe Injuries	67,603	65,099	65,027	68,846	74,992	74,362
Severe Injuries	13,136	12,620	12,555	12,877	12,812	12,321
Electricity, Gas, Steam, and Air Conditioning Supply						
Total Injuries	1,106	970	943	744	764	750
Non-Severe Injuries	914	789	772	621	637	636
Severe Injuries	192	181	171	123	127	114
Water Supply; Sewerage; Waste Management						
Total Injuries	9,546	9,073	9,123	11,149	11,011	11,150
Non-Severe Injuries	8,182	7,744	7,739	9,640	9,488	9,584
Severe Injuries	1,364	1,329	1,384	1,509	1,523	1,566
Construction						
Total Injuries	39,040	36,812	35,929	34,903	36,202	36,946
Non-Severe Injuries	30,013	28,067	27,470	26,655	27,915	28,649
Severe Injuries	9,027	8,745	8,459	8,248	8,287	8,297
Wholesale and Retail Trade; Repair of MotorVehicles/Motorcycles						
Total Injuries	39,659	38,061	38,738	36,002	36,834	36,701
Non-Severe Injuries	33,845	32,349	32,841	30,743	31,595	31,589
Severe Injuries	5,814	5,712	5,897	5,259	5,239	5,112
Transportation and Storage						
Total Injuries	36,682	35,518	36,418	40,355	41,476	41,767
Non-Severe Injuries	30,811	29,640	30,590	34,100	35,323	35,599
Severe Injuries	5,871	5,878	5,828	6,255	6,153	6,168
Accommodation and Food						
Total Injuries	20,735	20,256	21,508	21,809	23,073	23,766
Non-Severe Injuries	18,189	17,776	18,973	19,283	20,439	21,237
Severe Injuries	2,546	2,480	2,535	2,526	2,634	2,529
Information and Communication						
Total Injuries	2,641	2,429	2,430	2,504	2,429	2,323
Non-Severe Injuries	2,199	2,029	2,011	2,107	2,021	1,951

Sector	2014	2015	2016	2017	2018	2019
Severe Injuries	442	400	419	397	408	372
Financial and Insurance Activities						
Total Injuries	1,881	1,785	1,746	1,715	1,686	1,629
Non-Severe Injuries	1,573	1,471	1,425	1,398	1,370	1,352
Severe Injuries	308	314	321	317	316	277
Real Estate Activities						
Total Injuries	2,825	2,578	2,498	2,429	1,936	1,710
Non-Severe Injuries	2,411	2,222	2,188	2,078	1,636	1,436
Severe Injuries	414	356	310	351	300	274
Professional, Scient. and Tec. Activities						
Total Injuries	5,740	5,499	5,942	4,482	4,408	4,340
Non-Severe Injuries	4,917	4,712	5,072	3,811	3,682	3,707
Severe Injuries	823	787	870	671	726	633
Administrative and Support Activities						
Total Injuries	21,416	20,709	21,224	23,007	23,782	23,746
Non-Severe Injuries	18,639	18,024	18,426	20,014	20,684	20,622
Severe Injuries	2,777	2,685	2,798	2,993	3,098	3,124
Education						
Total Injuries	3,017	2,827	2,849	2,785	2,812	2,724
Non-Severe Injuries	2,719	2,533	2,563	2,532	2,582	2,491
Severe Injuries	298	294	286	253	230	233
Human Health and Social Work						
Total Injuries	35,757	33,458	30,639	31,244	29,636	30,367
Non-Severe Injuries	32,414	30,279	27,751	28,207	26,514	27,295
Severe Injuries	3,343	3,179	2,888	3,037	3,122	3,072
Arts, Entertainment and Recreation						
Total Injuries	3,669	3,465	3,740	3,779	3,798	3,962
Non-Severe Injuries	2,926	2,743	3,038	3,091	3,163	3,321
Severe Injuries	743	722	702	688	635	641
Other Service Activities						
Total Injuries	5,358	5,057	4,993	4,383	4,140	4,030
Non-Severe Injuries	4,389	4,176	4,119	3,566	3,386	3,341
Severe Injuries	969	881	874	817	754	689

Note: This table presents the total, severe and non-severe injuries reported across different sectors from 2014-2019. Each sector is displayed in three rows: (i) the total number of cases, (ii and iii) the severity level defined by INAIL classification standards.

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