Accidents at work - statistics on causes and circumstances

"During 2020, 3 in 10 (30.5%) non-fatal accidents at work in the EU took place on industrial sites."

"During 2020, close to one-quarter (23.2%) of fatal accidents at work in the EU resulted from losing control of a machine, tool or transport/handling equipment."

"During 2020, the most common types of non-fatal accidents at work in the EU resulted from physical or mental stress (23.2%) or impact with a stationary object (21.0%)."

This article presents a set of main statistical findings in relation to indicators concerning non-fatal and fatal accidents at work in the European Union (EU). The statistics presented have been collected within the framework of the European statistics on accidents at work (ESAW) administrative data collection exercise. The particular focus of this article is an analysis of these statistics according to the worker’s location at the time of the accident, the type of working process and physical activity being undertaken at the time of the accident and the cause of the accident. The data are presented for the total economy (all activities) and for five selected NACE sections: agriculture, forestry and fishing (NACE Section A), manufacturing (Section C), construction (Section F), wholesale and retail trade (Section G), transportation and storage (Section H).

Underestimates because of incomplete information

It should be noted that for many of the analyses presented in this article there is a heading for no information. While all EU Member States provided information for the total number of fatal and non-fatal accidents with an analysis by economic activity (NACE), not all of them provided data according to the other types of analyses presented in this article. The accidents for EU Member States that did not provide data for a particular analysis are included within a heading no information. In this way, the total number of accidents remains correct for individual Member States as well as for the EU as a whole. For several of the analyses, notably by workstation (location), by working process and by specific physical activity, the proportion of accidents within the EU for which no information is available is relatively high. As such, when analysing the EU data, the number of accidents for the various categories that are specified (and the share of these categories in the total) should be regarded as a lower limit: these numbers (and shares) are likely to be under-estimates.

When combining several classifications, fatal accidents at work can be rare events

The absolute number of fatal accidents can be relatively small when looking at detailed data. For example, when focusing on particular economic activities for particular EU Member States (especially for the smaller ones) and/or when crossed with the various other classifications used in this article. For example, in the final figure of this article (Figure 8) it is possible to see that all fatal accidents at work in the construction sector in Luxembourg resulted from an impact with a stationary object. However, there was only one fatal accident at work in the Luxembourgish construction sector in the latest year for which data is available. As such, particularly high shares may reflect rare events, rather than a concentration of accidents in a combination of the categories studied.

Data extracted in October 2022.
Planned update: November 2023.
Workstation accidents

Non-fatal accidents

In 2020, more than half (55.9%) of the 2.7 million non-fatal accidents that took place at work in the EU occurred when a person was at their usual workstation or within the usual local unit of work (see Table 1). These accidents relate to fixed workstations in a workshop, shop, office and more generally, premises of the local unit of the employer. Less than one-fifth of the total (19.2%) took place at an occasional or mobile workstation or during a journey made on behalf of an employer (these statistics exclude trips made to/from work). Examples of employees with mobile workstations include lorry drivers, construction workers or refuse collectors. Examples of employees with occasional workstations include people making occasional journeys on behalf of their employer, people making specific interventions for their employer outside their usual local unit (for example, on the premises of a client for a meeting, or to install or repair something). A relatively small share (0.7%) of all non-fatal accidents took place in other locations/workstations. Note that information on the location of accidents at work was not available for almost one-quarter (24.2%) of all non-fatal accidents in the EU in 2020.

In 2020, the likelihood of a non-fatal accident taking place in the EU at a person’s usual workstation was higher for people working in wholesale or retail trade (76.2% of all non-fatal accidents) and manufacturing (72.9%). As might be expected given the nature of the work, for people working in construction (50.5% of all non-fatal accidents at work in construction) or in transportation and storage (40.6%), accidents at an occasional or mobile workstation or during a journey on behalf of their employer were considerably more likely than for the other activities shown in Table 1. The share of non-fatal accidents which took place in other workstations did not rise above 1.3% for any of the NACE sections presented.

Table 1: Non-fatal and fatal accidents at work by workstation and economic activity, EU, 2020

Source: Eurostat (hsw_ph3_01)
slightly larger proportion of non-fatal accidents among men (rather than women) occurred at their usual workstation or within the usual local unit of work within agriculture, forestry and fishing, as well as within transportation and storage.

Some of these gender differences may be linked to structural differences in the occupations that are carried out by men and women within an activity. For example, in construction a higher proportion of men (50.7 %) than women (37.8 %) experienced a non-fatal accident in occasional or mobile workstations or during a journey made on behalf of an employer, suggesting that men in the EU were more likely to work on external construction sites or to drive vehicles and that women were more likely to work in administrative or supporting roles within the local unit of work.

Non-fatal accidents at work by workstation, sex and economic activity, EU, 2020

<table>
<thead>
<tr>
<th>Economic Activity</th>
<th>Men</th>
<th>Women</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agriculture, forestry and fishing (A)</td>
<td>30%</td>
<td>20%</td>
</tr>
<tr>
<td>Construction (F)</td>
<td>40%</td>
<td>30%</td>
</tr>
<tr>
<td>Wholesale and retail trade (G)</td>
<td>20%</td>
<td>10%</td>
</tr>
<tr>
<td>Transportation and storage (H)</td>
<td>30%</td>
<td>20%</td>
</tr>
</tbody>
</table>

Fatal accidents

In 2020, there were 3331 fatal accidents at work in the EU. Among the fatal accidents at work for which the location of the accident was specified, the vast majority either took place in occasional or mobile workstations or during a journey made on behalf of an employer (37.6 %) or in the usual workstation or local work unit (31.9 % of the total). As with non-fatal accidents, a relatively small share (1.1 %) of fatal accidents at work took place at other workstations. For nearly 3 in 10 (29.4 %) fatal accidents at work in 2020, there was no information available for the location of the accident.
Across the EU, fatal accidents were more likely than average to occur in occasional or mobile workstations or during a journey made on behalf of an employer within transportation and storage (53.0 %) and construction (52.5 %). Within agriculture, forestry and fishing, 1.4 % of fatal accidents at work took place at other workstations, the highest share among the activities shown in Table 1.

**Working environment**

**Non-fatal accidents**

The analysis of accidents at work presented in Table 2 provides information concerning the type of working environment where accidents took place. In 2020, the highest share of non-fatal accidents at work in the EU occurred at industrial sites (30.5 %), followed by tertiary sites (15.6 %). Three other working environments accounted for close to one-tenth of all non-fatal accidents: construction sites, opencast quarries or mines (10.3 %), health establishments (8.9 %) and public areas (8.8 %). As might be expected, non-fatal accidents at work for certain activities were concentrated in particular working environments, such as industrial sites for manufacturing (78.1 % of the total for this activity), construction sites, opencast quarries or mines within construction (62.7 %) and farming, fish farming or forest zones for agriculture, forestry and fishing (73.4 %).

**Table 2: Non-fatal and fatal accidents at work by working environment and economic activity, EU, 2020**

<table>
<thead>
<tr>
<th>NACE (Section)</th>
<th>Non-fatal accidents at work</th>
<th>Fatal accidents at work</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Total</td>
<td>Industrial site</td>
</tr>
<tr>
<td>(thousands)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Number</td>
<td>2505.7</td>
<td>832.1</td>
</tr>
<tr>
<td>Agriculture, forestry and fishing (A)</td>
<td>107.9</td>
<td>7.0</td>
</tr>
<tr>
<td>Manufacturing (C)</td>
<td>492.3</td>
<td>334.1</td>
</tr>
<tr>
<td>Construction (F)</td>
<td>353.5</td>
<td>47.2</td>
</tr>
<tr>
<td>Wholesale and retail trade (G)</td>
<td>324.7</td>
<td>137.1</td>
</tr>
<tr>
<td>Transportation and storage (H)</td>
<td>228.6</td>
<td>90.1</td>
</tr>
</tbody>
</table>

Note: all accidents for Belgium, Finland and Sweden are included in the heading for other or no information (as well as in the total).
Source: Eurostat (online data code: hsw_ph3_02)

**Figure 2** provides a similar analysis for non-fatal accidents in the EU, with additional information by age. It shows that in 2020 a higher proportion of accidents at work involving young persons (defined here as those aged less than 25 years) were on industrial sites, on tertiary sites, or on construction sites, opencast quarries or mines. By contrast, among older persons (defined here as those aged 55 years and over) non-fatal accidents at work were more likely (than for younger workers) to occur in public areas or in farming, fish farming or forest zones. These figures are influenced, at least to some degree, by the relative size of each age group within the total workforce for different activities: for example, a relatively small number of older persons work in the construction sector.
### Fatal accidents

Turning to fatal accidents at work, the highest share in 2020 across the EU took place in public areas (22.4 %), followed by industrial sites (18.2 %), construction sites, opencast quarries or mines (15.7 %) and farming, fish farming and forest zones (8.9 %). Looking at the selected NACE sections, the proportion of fatal accidents that took place in public areas was higher than the share of non-fatal accidents in public areas for each of the five activities shown in Table 2. A particularly high share of fatal accidents within transportation and storage took place in public areas (53.9 %). In contrast, compared with non-fatal accidents at work, the share of fatal accidents at work was particularly low at tertiary sites (6.3 % compared with 15.6 % for non-fatal accidents) and at industrial sites (18.2 % compared with 30.5 %).
Working process accidents

The information presented in Table 3 is related to the main type of work performed by the victims of accidents. In 2020, the most common working processes when a non-fatal accident at work took place in the EU included production, manufacturing, processing or storing (10.8 % of all non-fatal accidents at work) and the provision of services to enterprises and/or the general public, including intellectual activities (9.5 %). Note that for almost three quarters (70.3 %) of non-fatal accidents at work in the EU, information on the working process was not available or was from a minor category (shown combined in Table 3).

As may be expected, certain working processes were more common as causes of non-fatal accidents in particular activities. For example, within agriculture, forestry and fishing, there was a relatively high proportion of non-fatal accidents at work in the EU that were linked to agricultural work, forestry, horticulture, fish farming or work with live animals (34.3 % of non-fatal accidents at work in this sector in 2020); within manufacturing, 27.7 % of non-fatal accidents at work occurred while involved in production, manufacturing, processing or storing; within construction, 18.6 % of non-fatal accidents at work were linked to excavation, construction, repair or demolition work; within transportation and storage, 10.3 % of non-fatal accidents at work were related to movement, sport or an artistic activity. These four combinations of economic activities and working processes also recorded the highest numbers of fatal accidents at work in the EU, ranging from 94 deaths in manufacturing related to production, manufacturing, processing or storing up to 190 deaths in construction related to excavation, construction, repair and demolition.

<table>
<thead>
<tr>
<th>NACE (Section)</th>
<th>Non-fatal accidents at work (thousands)</th>
<th>Fatal accidents at work (number)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agriculture, forestry and fishing (A)</td>
<td>197.0</td>
<td>4.8</td>
</tr>
<tr>
<td>Manufacturing (C)</td>
<td>422.3</td>
<td>31.5</td>
</tr>
<tr>
<td>Construction (F)</td>
<td>335.3</td>
<td>22.7</td>
</tr>
<tr>
<td>Wholesale and retail trade (G)</td>
<td>324.7</td>
<td>17.1</td>
</tr>
<tr>
<td>Transportation and storage (H)</td>
<td>225.0</td>
<td>47.7</td>
</tr>
</tbody>
</table>

Note: all accidents for Czechia, Denmark, Germany, Ireland, Greece, Cyprus, Luxembourg, Malta, the Netherlands and Sweden are included in the heading for other or no information (as well as in the total).

Source: Eurostat (online data code: hsw_ph3_03)

Table 3: Non-fatal and fatal accidents at work by working process and economic activity, EU, 2020

Specific physical activity

Data relating to accidents at work by specific physical activity concern what the victim was doing at the exact time of an accident in contrast to the information by working process (as shown above) which describes the main task being performed over a more substantial period. Almost one-fifth (18.2 %) of the non-fatal accidents that took place in the EU in 2020 could be associated with the physical activity of movement (see Figure 3), while around one-tenth were linked to the handling of objects (11.1 %) as well as to carrying something by hand (9.1 %).

The situation was quite different concerning fatal accidents at work in the EU, insofar as the largest share of all fatal accidents in 2020 took place while people were driving or on board transport or handling equipment (16.1 %), with
the next highest share associated with movement (14.9 %).

Having identified that the highest share of fatal accidents at work in 2020 was linked to the specific physical activity of driving or being on board transport or handling equipment, Figure 4 shows more detailed information for this specific physical activity solely for the transportation and storage sector. Across the EU, some 9.8 % of all non-fatal accidents in the transportation and storage sector could be attributed to driving or being on board transport or handling equipment. A more detailed analysis reveals that more than one-third (35.3 %) of non-fatal accidents in the Dutch transportation and storage sector in 2020 were linked to driving or being on board transport or handling equipment. Shares of at least one in five were also recorded in Romania, Slovenia, Bulgaria, Croatia, Latvia and Spain. By contrast, in Finland, Luxembourg and Lithuania less than 1 in 10 non-fatal accidents in the transportation and storage sector resulted from driving or being on board transport or handling equipment. The lowest share was 0.3 % in Lithuania.

Figure 4 also shows that there were eight EU Member States (among those for which data are available) where at
least half of all fatal accidents within the transportation and storage sector in 2020 could be attributed to the specific physical activity of driving or being on board transport or handling equipment. Seven EU Member States reported shares of at least one-quarter but less than half, while Slovakia (20.0 %), Lithuania (18.2 %) and Slovenia (0.0 %) had the lowest shares of fatal accidents at work within the transportation and storage sector in 2020 attributed to driving or being on board transport or handling equipment.

Accidents at work within the transportation and storage sector – share from driving/being on board a means of transport or handling equipment, 2020

![Graph](image)

Source: Eurostat (hsw_ph3_04)

Figure 4: Accidents at work within the transportation and storage sector – share from driving/being on board a means of transport or handling equipment, 2020 (%) Source: Eurostat (hsw_ph3_04)

Cause of accident

The cause of an accident is defined in terms of the last event differing from the norm that resulted in an accident. In 2020, the most common causes that triggered non-fatal accidents at work in the EU included losing control of machines, tools or transport and handling equipment (20.8 % of the total), body movement under or with physical stress (18.4 %) and slipping, stumbling or falling (17.6 %). The share of non-fatal accidents at work in the EU in 2020 for which no information on the cause is available was relatively small (13.0 %).

Losing control of machines, tools or transport and handling equipment was also the most common cause of fatal accidents at work, accounting for 23.2 % of the total number of workplace deaths in the EU in 2020, while slipping, stumbling or falling (13.8 %), overflow, leak, vaporisation or emission (12.0 %) and breakage, bursting or collapse of material agents (11.2 %) were the only other causes that accounted for double-digit shares of the total number of such accidents. The share of fatal accidents at work in the EU in 2020 for which no information on the cause is available was less than one-fifth (18.0 %).
Having identified that the highest number of non-fatal and fatal accidents at work in 2020 were caused by losing control of machines, tools or transport and handling equipment, Figure 6 shows more detailed information for this cause of accidents within the wholesale and retail trade sector. Some 27.0 % of all non-fatal accidents in the EU’s wholesale and retail trade sector in 2020 could be attributed to losing control of machines, tools or transport and handling equipment, a share that stood at 25.3 % for fatal accidents.

An analysis of the EU Member States based on data for 2020 reveals that more than two-fifths of all non-fatal accidents in the wholesale and retail trade sectors of Latvia, Austria, Germany, Slovenia and Cyprus were caused by losing control of machines, tools or transport and handling equipment. A similar analysis reveals that all fatal accidents in the Cypriot, Hungarian and Luxembourgish wholesale and retail trade sectors could be attributed to losing control of machines, tools or transport and handling equipment, while the share was two-thirds in Lithuania and Slovakia and at least half in Germany and Denmark. Seven EU Member States reported no fatal accidents at work in the wholesale and retail trade sector that could be attributed to losing control of machines, tools or transport and handling equipment.
Data on accidents at work by contact mode of injury relate to how the victim of an accident was hurt by the material agent that caused their injury. If there are several modes of injury identified, then the one causing the most serious injury should be recorded. In 2020, the most common contact modes for non-fatal accidents in the EU included: physical or mental stress (23.2 % of all non-fatal accidents); impact with a stationary object (in other words, the victim was in motion) - 21.0 %); contact with a sharp/pointed or rough/coarse agent (14.7 %); and being struck by an object in motion/a collision (11.5 %). Note that for 11.2 % of non-fatal accidents, there was no contact or information on the contact mode is not available. A similar analysis for fatal accidents reveals that the most common contact mode of injury was being struck by an object in motion/a collision (20.6 % of all fatal accidents in the EU), followed by impact with a stationary object (18.5 %), electrical voltage, temperature or hazardous substances (14.7 %) and being trapped or crushed (12.2 %). For 14.4 % of fatal accidents there was no contact or information on the contact mode is not available.

Within the transportation and storage sector, being struck by an object in motion accounted for more than one-third (36.1 %) of all fatal accidents at work in the EU in 2020, while nearly one-quarter of fatal accidents within the wholesale and retail trade (24.2 %) were attributed to the same mode. By contrast, within the construction sector the most common mode of injury was the impact of a moving victim with a stationary object, which accounted for approximately one-quarter (24.6 %) of all non-fatal accidents and close to two-fifths (37.4 %) of all fatal accidents in this sector.
This information is developed further in Figure 8 which presents a more detailed analysis of accidents in the construction sector resulting from an impact with a stationary object. This contact mode of injury accounted for more than half of all non-fatal accidents at work in the construction sectors of Greece (58.0 %) and Bulgaria (50.9 %) in 2020, whereas the share was lowest in France at 18.5 %.

A similar analysis reveals that all (100.0 %) fatal accidents at work in the Luxembourgish construction sector could be attributed to impact with a stationary object, as could two-thirds in the Cypriot construction sector and between 50.0 % and 61.1 % of all fatal accidents in the construction sectors of eight other EU Member States. No such fatal accidents were reported from this mode of contact in 2020 in the construction sectors of Finland and Estonia. Note that for relatively small EU Member States, the absolute number of fatal accidents in this sector may be very small.
Accidents at work within the construction sector – share from impact with a stationary object (victim in motion), 2020

(%)  

![Bar chart showing the share of accidents at work within the construction sector in 2020.]

Source: Eurostat (online data code: hsw_ph3_08)

Figure 8: Accidents at work within the construction sector – share from impact with a stationary object (victim in motion), 2020 (%) Source: Eurostat (hsw_ph3_08)

Source data for tables and graphs

- Accidents at work by causes and circumstances: tables and figures

Data sources

In December 2008, the European Parliament and the Council adopted Regulation (EC) No 1338/2008 on Community statistics on public health and health and safety at work. The Regulation is designed to ensure that health statistics provide adequate information for all EU Member States to monitor Community actions in the field of public health and health and safety at work. In April 2011, a European Commission Regulation (EU) No 349/2011 on statistics on accidents at work was adopted specifying in detail the variables, breakdowns and metadata that Member States are required to deliver.

European statistics on accidents at work (ESAW) is the main data source for EU statistics relating to health and safety at work issues. ESAW includes data on occupational accidents that result in at least four calendar days of absence from work, including fatal accidents. The phrase “during the course of work” means while engaged in an occupational activity or during the time spent at work. This generally includes cases of traffic accidents (road or other means of transport) for journeys that are made during the course of work but excludes accidents that take place during a journey between home and the workplace.

There are nine variables related to causes and circumstances of accidents at work within the ESAW data collection. According to the ESAW Regulation, countries are free to choose at least three out of these nine variables on causes and circumstances and should report data for these (they may provide information on more than three variables if they choose to do so). As such, while the total coverage of the EU is complete for each individual variable, the proportion of information that is not specified (included within the heading no information in tables and figures in this article) can vary greatly depending on how many and which EU Member States have provided detailed information. The complete list of nine variables covers: workstation, working environment, working process, specific physical activity, material agent associated with the specific physical activity, deviation, material agent associated with the deviation, contact – mode of injury, material agent associated with the contact – mode of injury.

An accident at work is defined in ESAW methodology as a discrete occurrence during the course of work which
leads to physical or mental harm. Fatal accidents at work are those that lead to the death of the victim within one year of the accident taking place. Non-fatal accidents at work are defined as those that imply at least four full calendar days of absence from work (they are sometimes also called "serious accidents at work"). Non-fatal accidents at work often involve considerable harm for the workers concerned and their families and they have the potential to force people, for example, to live with a permanent disability, to leave the labour market, or to change job. Indeed, they may result in a considerable number of working days being lost within the EU's economy.

The statistics presented for accidents at work refer to declarations made to either public (social security administrations) or private insurance schemes, or to other relevant national authorities (for example, those controlling labour or workplace inspections). Indicators on accidents at work may be presented as absolute values, as percentage distributions, as incidence rates in relation to every 100,000 persons employed (the denominator being provided by the authorities in the EU Member States that are responsible for ESAW data collection or by the EU's labour force survey (LFS)) or as standardised incidence rates.

For more information on ESAW data please refer to the main article on Accidents at work statistics.

Context

A safe, healthy working environment is a crucial factor in an individual's quality of life and is also a collective interest. EU Member State governments recognise the social and economic benefits of better health and safety at work. Reliable, comparable, up-to-date statistical information is vital for setting policy objectives and adopting suitable policy measures and preventing actions.

At the beginning of the COVID-19 pandemic, preventive measures were put in place with the aim of limiting the spread of the Coronavirus and to combat the epidemic. Amongst these, some working activities were either completely stopped or restricted by many employers. In some cases, the employers applied the method of working remotely or working from home. This had a direct impact on all economic sectors. For the economic sectors where the activity was stopped or reduced, the number of accidents decreased. Inactivity or reduced activity in certain sectors resulted in a decreased number of workers and therefore showed unusual decrease in reported accidents at work. On the opposite end, in certain sectors, the COVID-19 pandemic generated an increase in the activity, for example, human health activities, residential care activities or social work activities without accommodation. Therefore, the increased activity generated generally higher numbers of reported accidents at work, especially when the cases of COVID-19 of occupational origin were included according to the national practice and legislation. Public services that deal with the administrations in charge of receiving notifications, reporting, investigations and recognition of accidents at work could have functioned with limited capacities. The impact of all the actions described above, led to a decrease in the reported number of accidents at work in the data collection for the reference year 2020 (compared with the previous reference year), for the majority of the ESAW reporting countries.

For more information on health and safety at work policy, please refer to the main article on Accidents at work statistics.

Other articles

- Accidents and injuries statistics
- Accidents at work statistics
- Accidents at work – statistics by economic activity
- Health in the European Union – facts and figures – online publication
- Health statistics introduced
Database

- Health, see:

Health and safety at work (hsw)

Accidents at work (ESAW, 2008 onwards) (hsw_acc_work)

Causes and circumstances of accidents at work (ESAW Phase III) (hsw_ph3)

Accidents at work by sex, age, severity, NACE Rev. 2 activity and workstation (hsw_ph3_01)
Accidents at work by sex, age, severity, NACE Rev. 2 activity and working environment (hsw_ph3_02)
Accidents at work by sex, age, severity, NACE Rev. 2 activity and working process (hsw_ph3_03)
Accidents at work by sex, age, severity, NACE Rev. 2 activity and specific physical activity (hsw_ph3_04)
Accidents at work by sex, age, severity, NACE Rev. 2 activity and material agent of specific physical activity (hsw_ph3_05)
Accidents at work by sex, age, severity, NACE Rev. 2 activity and deviation (hsw_ph3_06)
Accidents at work by sex, age, severity, NACE Rev. 2 activity and material agent of deviation (hsw_ph3_07)
Accidents at work by sex, age, severity, NACE Rev. 2 activity and contact mode of injury (hsw_ph3_08)
Accidents at work by sex, age, severity, NACE Rev. 2 activity and material agent of contact mode injury (hsw_ph3_09)

Dedicated section

- Health

Methodology

ESMS metadata file

- Accidents at work (ESAW, 2008 onwards) (ESMS metadata file – hsw_acc_work_esms)

Publication

- European statistics on accidents at work (ESAW) – Summary methodology – 2013 edition

External links

- European Agency for Safety and Health at Work, see:
  - EU Strategic Framework on Health and Safety at Work 2021–2027
- European Commission – Employment, Social Affairs and Inclusion – Health and safety at work
- European Foundation for the Improvement of Living and Working Conditions (EUROFOUND) – Health and well-being at work
- International Labour Organization (ILO) – Safety and health at work