Evaluation of Office Fall Injuries

Josie Browning

Table of contents

Preface

You are a data scientist for a mid-sized business, in a small group of 3-4 data scientists. You've been tasked with creating a report evaluating a scenario for your business. Your colleagues will also be evaluating the same scenario, and your reports will be used in aggregate to determine a consensus (or lack thereof) on the company's action. The reports will also be used to inform downsizing that is rumored to be coming - you want to ensure your report is better than your peers so that you aren't as easy to cut.

You may talk to your peers who are assigned the same scenario, but you do not want to collaborate too closely, lest you both become targets of the rumored layoffs.

I've scaffolded this report for you to make this process easier - as we talk about different sections of a report in class and read about how to create similar sections, you will practice by writing the equivalent section of your report.

The basic steps for this task are as follows:

- Identify the research question from the business question
- Identify data set(s) which are (1) publicly available (you don't have a budget to pay for private data) and (2) relevant to your task
  - (HW Week 6) Document your data sets in `draft-data-doc.qmd`
- Conduct a statistical analysis to support your answer to your research and business questions
  - Write a methods section for your business report corresponding to your statistical analysis
  - (HW Week 9) Draft of results section of business report with relevant graphics/visual aids in `draft-results.qmd`
- Write your report
  - (HW Week 10) Draft of Intro/Conclusion sections in `draft-intro-conclusions.qmd`

  - (HW Week 11) Draft of Executive summary section in `draft-exec-summary.qmd`

- Revise your report
  - (HW Week 12 – not turned in) Revise your report
  - (HW Week 13) - Rough draft of report due. Create one or more qmd files for your report (you can overwrite or delete intro.qmd and summary.qmd), include the names of each file (in order) in `_quarto.yml`. You should use references (edit references.bib and use pandoc citations). Make sure your report compiles and looks reasonable in both html and pdf.
  - Develop a presentation to go along with your report (Week 13). Create slides for your report using quarto.

- Peer revise reports
  - Peer revise reports
  - (HW Week 14) - Make edits to your report from comments received from peer review

- Final report & presentation due

1 Introduction

Safety in the workplace is the most important priority for any company to have. No matter the industry, location, or project, taking measures to ensure workers are not at risk of injury is a necessity. It is both the responsibility of management and workers to stay informed and up-to-date with safety regulations. These rules and regulations can look very different industry to industry. In an office setting, some may think safety is not a prioritized concern, but that is far from the truth. Falls are the leading cause of injuries in an office setting (U.S. Bureau of Labor Statistics 2021), and it is important to understand the risks, causes, and ways to reduce the probability of this type of injury.

A 2012 article from The Albert Einstein College of Medicine cited the Center of Disease Control and Prevention with the claim that "office workers are 2 to 2.5 times more likely to suffer an injury from a fall than non-office workers" (**WhatAreTop2012?**). An analysis into this claim may reveal insight on the source and interpretation of the original CDC data. It is possible this claim has two slightly different meanings:

1. Office workers are more likely to suffer an injury given they had a fall compared to non-office workers.
2. Office workers are more likely to have a fall that results in an injury compared to non-office workers.

In the original claim and this report, any reference to "falls" explicitly means falls on the same level, and excludes injuries resulting from falls to a different level (which are reported in separate categories in CDC and US Bureau survey data). The following analysis will compare the number of falls between office and non-office workers, and also the number of falls resulting in injury between the two groups. The difference between the two interpretations lead to two separate concerns: are office workers at higher risk of falling or higher risk of suffering an injury from a fall? It is also important to remember this data and claim is from 2012 at the latest, and the workplace has changed very much in the last decade.

While the claim may have held truth at the time, based on my research and analysis of 2023 CDC data, this claim is false in both interpretations. Non-office workers are about 1.5 times more likely to suffer an injury from a fall than an office worker.

2 Methods

2.1 Data Sources

In my analysis I worked with two datasets from the U.S. Bureau of Labor Statistics. I first used the Survey of Occupational Injuries and Illnesses data, which covers reported work-related injuries and are detailed by source and industry (U.S. Bureau of Labor Statistics 2021). This data is collected biennually, and the most recently available data is 2021-2022. I used this data to identify the specific number of injuries sustained by office workers in this time period, and further identified the injuries related to falls, trips, and slips. With these detailed variables in the dataset, I was able to compare the number of fall-related injuries between "office" and "non-office" industries.

Secondly, I examined the Injury Incidence Rates in workplaces detailed by industry and case type (U.S. Bureau of Labor Statistics 2023). This data includes injuries reported in 2023 that involved time away from work, which I used as a measure of severity in the work-related injuries. By looking at the total injuries reported, I was able to compare the number of "severe" injuries between "office" and "non-office" industries.

The U.S. Bureau of Labor Statistics used the North American Industry Classification System (NAICS). These codes easily identify industries on both a broad and specific level, depending on the number of digits in the code (2-6). This code is how I defined "office" and "non-office" industry.

An important note about both these dataset is that they include hierarchical entries, meaning some rows represent aggregate totals for a broader industry, followed by rows that represent subindustry counts. In these cases, the broader row count represents the sum of all subsequent subindustries. For my analysis, only one specified level of data was used to avoid double-counting.

2.2 Classification Method

To categorize the industry using NAICS codes, I choose to section the industies on the 3-digit level of the codes, so the several subindustries with 4,5, or 6 digit codes are grouped in with their respective broader industry. The categories of "office" industries includes the following:

- Information (511, 517, 518, 519)

- Finance and Insurance (521, 522, 523, 524)
- Real Estate (531, 532)
- Legal Services and Accounting (541)
- Management (551)
- Administrative Support (561).

I choose these codes based off of research and inspection of the code list in the dataset. These decisions are subjective, and all jobs in each industry may not all be true office jobs. There are also likely specific office jobs that are within many other "non-office" industries. It is important to acknowledge that cleanly dividing this data into "office" and "non-office" categories is imperfect, and further analysis with more precise measures could produce slightly different results.

2.3 Data Cleaning and Assumption

When starting the analysis, I made the assumption that a blank observation (indicated by a dash) represented a zero, not an NA. Entries with actual NA values were removed. There were 186 observations that were removed (on raw data, prior to sectioning with NAICS codes).

For clarity and convenience, I renamed several columns to have shorter names without spaces in them. To section the data by NAICS codes, I filtered the variable for only 3-digit observations, and then split the data using the list of 13 predecided codes.

For the first dataset, there were 2936 raw observations, and 96 sections at the 3-digit NAICS code level. After I split the data, there were 83 "non-office" industries and 13 "office" industries (listed above). For the second dataset, it contained 1074 raw observations, 87 subsections with 74 "non-office" and 13 "office".

2.4 Analysis

2.4.1 Libraries

I used the following libraries in R studio for my analysis:

- Readxl: This library allowed me to read in and use both my datasets, which were provided by the BLS in excel files.

- Dplyr: I used this library for the majority of my data handling, specifically the mutate statement which allowed me to easily manipulate dataframes. The filter and summarize statements were also extremely useful to sectioning the data into “office” and “non-office” dataframes.
- Ggplot2: I used the visualization terms in this library to create all graphs used in my analysis.
- Tidyr: This library has a function “pivot_longer” that I used in one case to reshape a dataframe for easier visualization.
- Stringr: I used one function “slice_max” to select a certain number of observation from a dataframe. Just like with the tidyr function, I used stringr for reshaping data for easier visualization.

2.4.2 Process

3 Results

3.1 Primary Findings

3.1.1 Mean Slips and Falls

The definition of "slips" in this dataset is a trip without a fall, which I believe is still relevant to the company's concern of fall-related safety. To reiterate, this dataset only records incidents that result in days away from work or job restriction, which I am generalizing to mean the incidents resulted in injury.

In 2023, the mean number of falls in non-office industries was 3361, and the mean for office industries was 2116. The mean number of slips in non-office industries was 949, and the mean was 695 for office industries (Figure 1). Non-office had, on average, about 1.5 times the number of falls and about 1.4 times more slips. This contradicts the previous claim of office workers being 2 to 2.5 times more likely than non-office workers to suffer an injury from a fall.

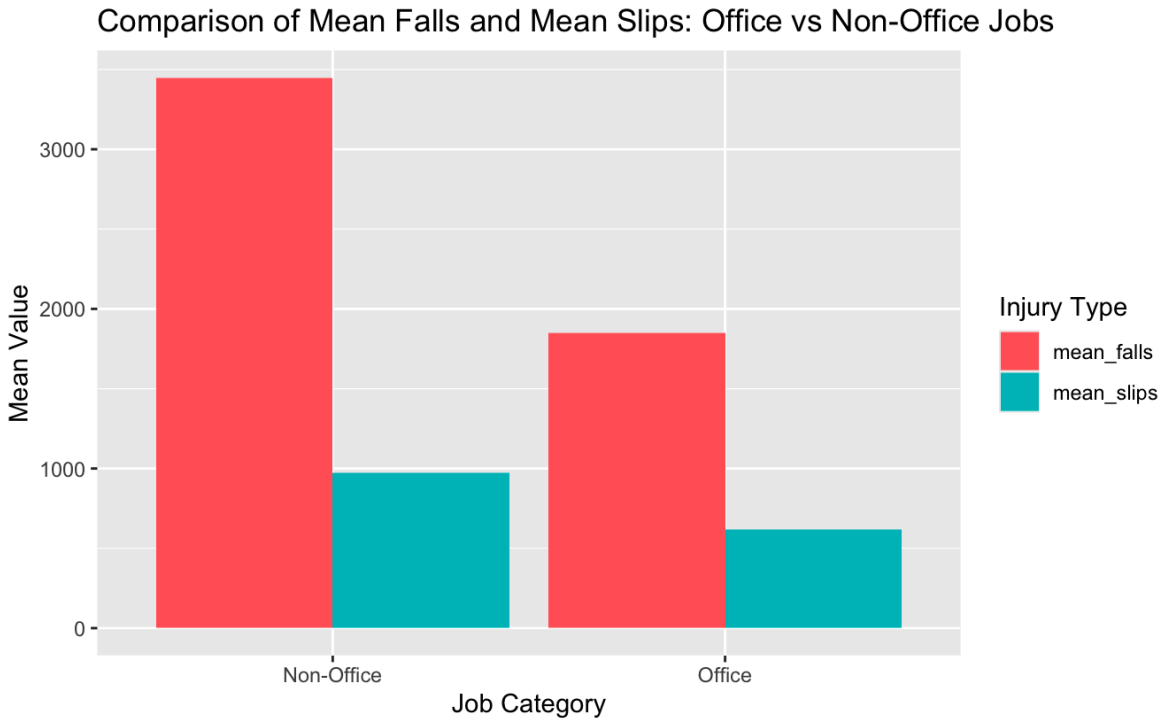

Figure 1: The mean number of slips and falls for both non-office and office industries. The mean number of falls/slips can also be interpreted as the mean number of injuries resulting from a workplace fall/slip.

3.1.2 Total Recordable Injury Cases

Non-office industries experienced a average rate of 3.06 workplace injuries, and office industries experienced an average of 0.93 workplace injuries. On average, non-office jobs reported was about 3.3 times the number of total recordable cases compared to office jobs (Figure 3).

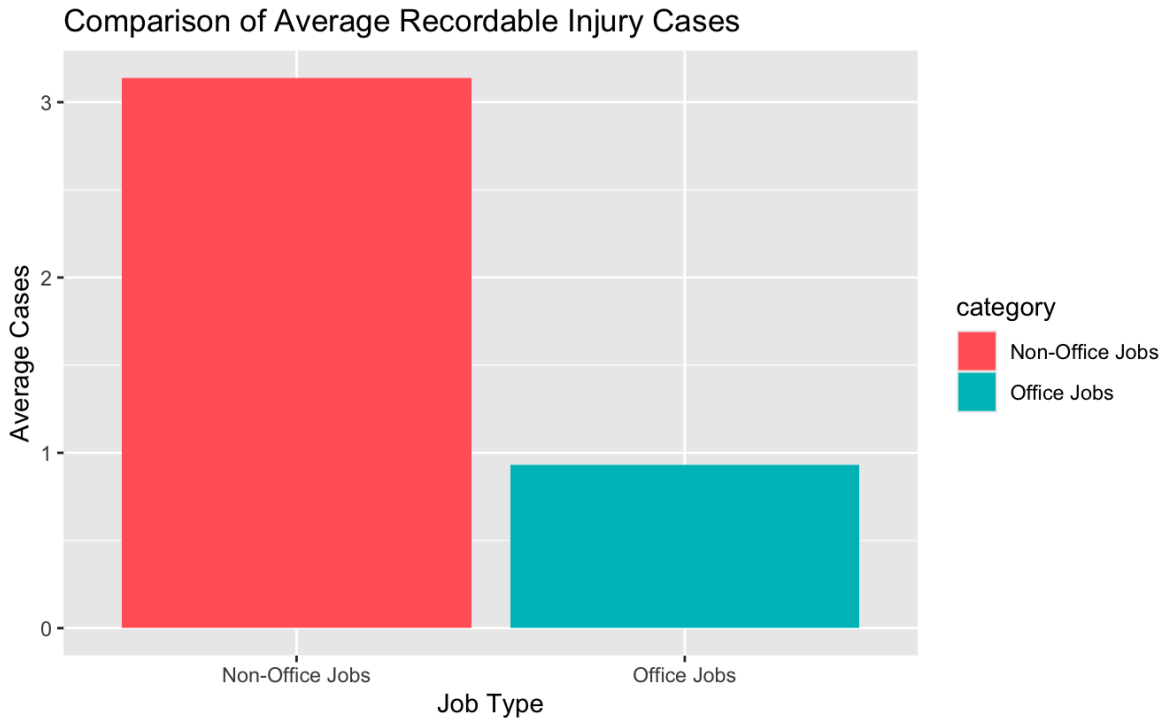

Figure 3: Average number of recordable injuries in both non-office and office industries in 2023

3.1.3 Injury Severity (Cases with Days Away from Work)

Non-office jobs also had a greater proportion of injuries resulting in time away from work. For non-office industries, the average number of injuries resulting in days away from work was 1.20. For office industries, the average was 0.36. Similarly to the total number of cases, the average for non-office industries was about 3.3 times larger than that of the office industries (Figure 4). This can be used to make inference on the average severity of the injuries that non-office workers and office workers are acquiring.

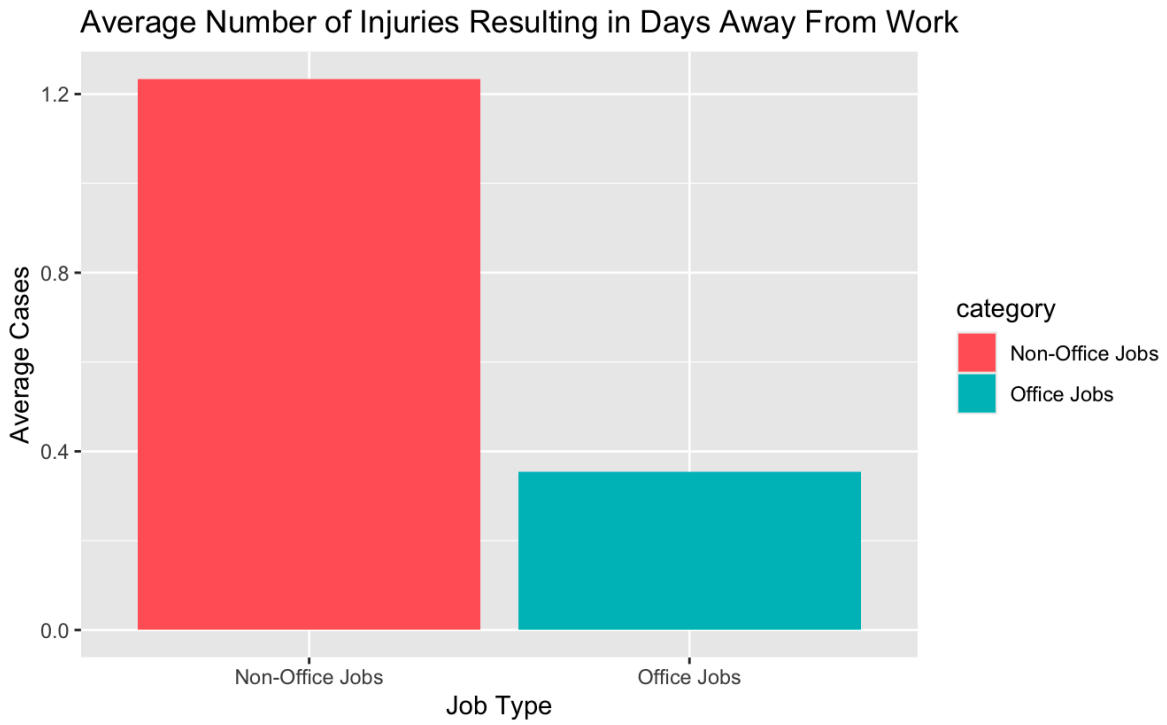

Figure 4: Average number of 2023 recordable injuries that resulted in days away from work in both non-office and office industries

3.1.4 Most Common Office Injuries

By visualizing the total reported injury cases (Figure 5), we can see the which type of injuries are most common. Falls on the same level are the second most common injury type reported in office spaces with 30,960 total cases in 2023.

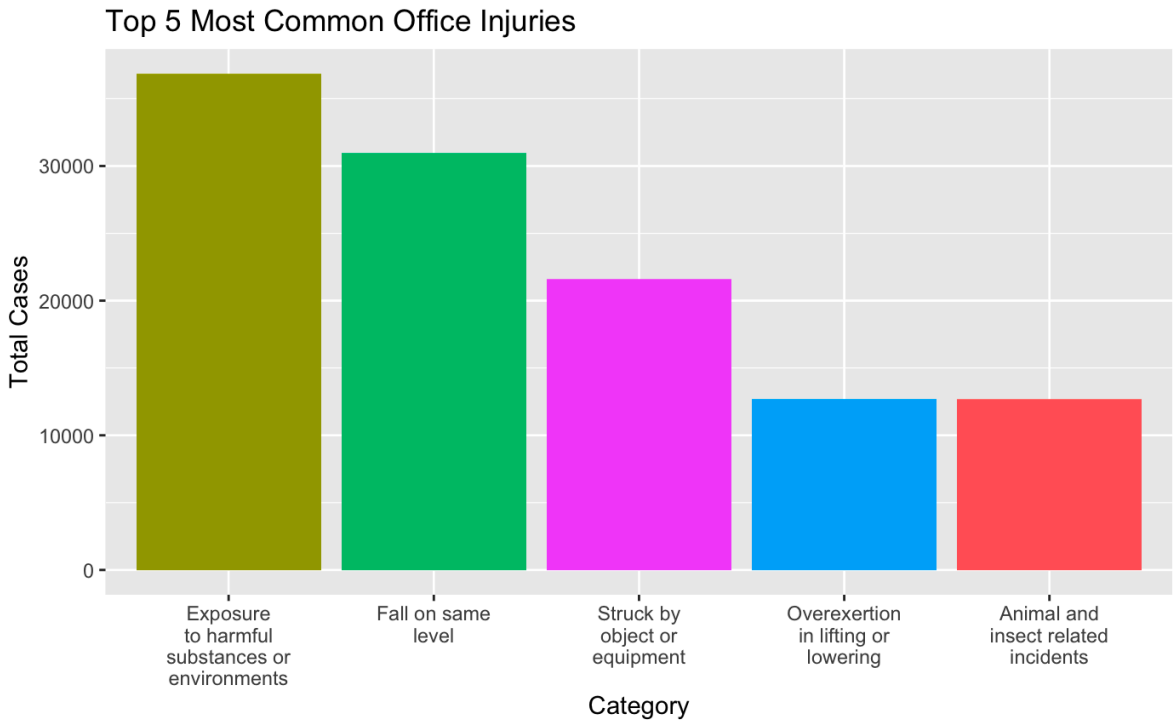

Figure 5: Total injury cases reported for office injuries by injury type. Only the 5 most common injury categories shown.

4 Discussion

The evidence found using the US Bureau of Labor Statistics data supports an overwhelming conclusion that is opposite than that of the original claim. While the original CDC data was unavailable to public access, the available data used for this analysis is reliable and established.

Using the 2023 survey of occupational injuries, I found that non-office workers are about 1.5 times more likely to suffer an injury from a fall, and also 1.4 times more likely to slip without falling than an office worker (U.S. Bureau of Labor Statistics 2021). This evidence directly opposes the original claim, and suggests that office workers are not at a higher risk of suffering injuries from falls than non-office workers. Generalizing to all types of injuries, I found that non-office industries have 3.3 times the number of recordable injuries compared to office industries (U.S. Bureau of Labor Statistics 2023). Similarly, the same data revealed that non-office industries had 3.3 times the number of recordable injuries that specifically required days away from work. The rate of recordable injuries and total recordable injuries with time away from work suggests that not only are non-office workers more likely to be injured at work, but also that the severity distribution of these injuries are higher than the injuries of office workers. This evidence combined builds a strong case against any claim that office workers are more likely to suffer an injury from a fall than a non-office worker.

Here is another way to think about this main conclusion: If a construction site and an accounting office have the same number of falls, the severity of those falls likely vary drastically. In many ways, we would hope to see less falls in the construction site than the office, because of the associated risk in the setting. According to the CDC , we see the highest number of workplace falls and fall injuries in construction, educational and health services, ambulance services, building maintenance, and transportation services (Centers for Disease Control and Prevention (CDC) 2024).

We should consider the fact that many industries filled predominantly by office jobs are partially exempt from OSHA record keeping because of the low incident rate (Occupational Safety and Health Administration (OSHA) 2023). This may lead to a bias in the data regarding how many fall injuries are reported in office industries. On the other hand, many office workers may be less conscious of OSHA regulations, and therefore increase the likelihood of falls. Both these factors may lead to different kinds of bias in the data, which could be addressed in the future by more focused studies into office workplace injuries, and also a stress on following OSHA safety regulations in all workplaces.

It should be acknowledged that the definition of "office" jobs and industries is, at times, subjective, and categorizing all the recognized NAICS industries into the two groups is not a perfect system. Some jobs, such as real estate, may require workers to have an office but also include extensive work outside an office. While there could be a debate on some industries being included or not, I believe the evidence is conclusive enough for the variability to not make a significant difference. Future work could compare results from different combinations of NAICS codes to see by how much the final conclusion changes.

Despite the evidence that office workplaces are at much lower risk for falls and overall injuries, the second most common injury in offices is still falls on the same level (U.S. Bureau of Labor Statistics 2021). Given that an office industry reports an injury, there is about an 18.5% chance the injury is a fall on the same level. The CDC cites the following reasons as the most common causes of falls in the workplace (Centers for Disease Control and Prevention (CDC) 2024):

- Unprotected edges
- Unsafely positioned ladders
- Misused fall protection
- Water, grease, and other contaminants on the floor
- Clutter and tripping hazards in walkways
- Irregularities in the floor and wall openings

Appropriate steps taken in an office could greatly reduce the risk of any workers falling, such as safety training, proper use of ladders, and cleaning up/labeling any floor area with liquid on it. It is a company's responsibility to ensure all parts of the building are using accessible architecture (ramps, elevators, wide doorways, etc.) so no employees are put in a position to take unnecessary risks.

This report concludes with strong evidence to say that office workers are not at a higher risk to suffer an injury from a fall than non-office workers. That being said, office workers still face the risk of injury if proper safety regulations are not followed. Every company highly values the well-being of their employees, and should always take the proper steps to ensure a comfortable and safe work environment.

5 Summary

For the last sixty years, Halpert & Co. has prioritized the safety of its employees in all areas of the company. Due to a discovered research claim, there has been a recent rise in concern about the risk of injury in office spaces. A 2012 article from The Albert Einstein College of Medicine cited the Center for Disease Control and Prevention claiming that "office workers are 2 to 2.5 times more likely to suffer an injury from a fall than non-office workers" (**WhatAreTop2012?**).

By analyzing 2023 survey data from the US Bureau of Labor Statistics, I found an opposing result of office workers being about 1.5 times less likely to suffer an injury from a fall than a non-office worker (U.S. Bureau of Labor Statistics 2021). Overall, non-office industries report 3.3 times the number of injuries as office industries and 3.3 times the number of injuries that result in needing time away from work (U.S. Bureau of Labor Statistics 2023). This result strongly suggests that non-office workers are at higher risk of being injured and suffering an injury of higher severity.

Despite the conclusion that office workers are at lower risk of injuries and falls, stronger safety policies in office spaces would not be a waste of time or resources. About 18.5% of all reported office injuries are falls on the same level, with the most common causes of the fall being misusing ladders, water or contaminants on floors, and tripping hazards in walkways (Centers for Disease Control and Prevention (CDC) 2024). Implementing safety training to use equipment and proper handling of spills and clutter hazards can significantly reduce the risk of fall injuries in the office.

References

Centers for Disease Control and Prevention (CDC). 2024. "About Falls in the Workplace." *Falls in the Workplace*, December. https://www.cdc.gov/niosh/falls/about/index.html.

Occupational Safety and Health Administration (OSHA). 2023. "OSHA Partially Exempt Industries." *Recordkeeping – Non-Mandatory Appendix A to Subpart B – Partially Exempt Industries | Occupational Safety and Health Administration*. https://www.osha.gov/recordkeeping/presentations/exempttable.

U.S. Bureau of Labor Statistics. 2021. "Survey of Occupational Injuries and Illnesses Data." *By Industry: R4 Detailed Industry by Selected Events or Exposures, 2021-22*. https://www.bls.gov/iif/nonfatal-injuries-and-illnesses-tables.htm.

———. 2023. "Injury Incidence Rates." *TABLE 1. Incidence Rates of Nonfatal Occupational Injuries and Illnesses by Industry and Case Types, 2023*. https://www.bls.gov/web/osh/table-1-industry-rates-national.htm.

A Draft: Data Documentation

1. Survey of Occupational Injuries and Illnesses Data - R4 Detailed Industry by Selected Events or Exposures, 2021-22

   XLSX

   Overview: Number of recorded injuries sectioned by industry and injury type. Industries are indicated by NAICS codes and broken down into subsections. The report of injuries are detailed by type of injury, which is also divided into subsections. It is important to note that observations consists of both totals and individual section injury numbers.

   Variables of Interest:

   - Falls on the Same Level: The number of reported falls on the same level for a given industry between 2021-2022, notably different than falls to a lower level. Falls to a lower level refer to falls from an elevated height. In this report we are only interested in falls on the same level.
   - Slips and Trips without Fall: The number of near-falls, which can still result in injury and often are caused by the same hazards that cause falls on the same level.

   Source: U.S. Bureau of Labor Statistics

2. Injury Incidence Rates - TABLE 1. Incidence Rates of Nonfatal Occupational Injuries and Illnesses by Industry and Case Types, 2023

   Link

   Overview: Number of recorded injuries by industry and case type. The industries are identified by the same NAICS codes as the R4 dataset. This dataset includes the overall total (rates are per 100 people), and the cases where injuries required time away from work.

   Variables of Interest:

   - Total Recordable Cases: This is the total number of injuries that were reported in a given industry for 2023. I am interested in comparing the total number of injuries between office and non-office industries.

- Cases with Days Away From Work: This variable is of interest as a measure of severity of injuries. I am making an assumption that a injury requiring time away from work indicates a higher severity injury. I am interested in comparing this variable between office and non-office industries.

Source: U.S. Bureau of Labor Statistics

B Article Sources

1. Source Office Injury Statistics - Rethink What You Know About Office Injuries

   Link

   Overview: States common causes and statistics of office injuries. They make the claim that falling is the most common office related accident, and that office workers are 2 to 2.5 times more likely to suffer an injury than a non-office worker (citing the CDC). It also defined what office falls include.

   Source: Aftermath

2. Non-Fatal Occupational Falls on the Same Level

   Link

   Overview: Comparing falls between industries, and categorizing falls that are "on the same level". It looks at differences in injuries between males and females, as well as by age and industry. Within each fall category, it also logs compensation costs that resulted from occupational falls.

   Source: National Library of Medicine

3. OSHA

   1. Partially Exempt Industries

      Link

      Overview: A list of industries that are partially exempt from OSHA, meaning they are not required to keep injury and illness records. This is relevant because it may cause gaps in numbers on industry injury records. Notably, many of the exempt employers can be categorized as office jobs.

   2. Census of Fatal Occupational Injuries Summary, 2023

      Link

      Overview: Commonly used statistics over fatal occupation injuries, broken into categorical statistics about work characteristics, private industries and occupation. This is a good source when comparing fatal injuries and non-fatal injuries in office settings.

4. Injuries, Illnesses, and Fatalities

   Link

   Overview: Numbers and charts on total nonfatal work injury and illnesses (specifically in private industries).

   Source: U.S. Bureau of Labor Statistics

C Draft: Results

C.1 Descriptive Statistics

In my analysis I worked with two datasets from the U.S. Bureau of Labor Statistics. I first used 2021-2022 data covering work injuries and illnesses detailed by source and industry U.S. Bureau of Labor Statistics (2021). Secondly, I examined workplace recordable injury rates by industry using 2023 data U.S. Bureau of Labor Statistics (2023). I categorized the data into office and non-office jobs based on the NAICS codes. I choose to make decisions on the 3-digit level of the codes, so there are several sub-industries with 4 and 5-digit codes that are within the chosen "office" industries. The category of office jobs includes the following:

- Information (511, 517, 518, 519)
- Finance and Insurance (521, 522, 523, 524)
- Real Estate (531, 532)
- Legal Services and Accounting (541)
- Management (551)
- Administrative Support (561).

I made the assumption that a blank observation (indicated by a dash) represented a zero, not an NA. Entries with actual NA values were removed.

For the first dataset, there were 2936 raw observations, and 258 sections at the 3-digit NAICS code level. After I split the data, there were 83 non-office industries and 13 office industries (listed above).

For the second dataset, it contained 1074 raw observations, 87 subsections with 74 non-office and 13 office.

C.2 Primary Findings

C.2.1 Mean Slips and Falls

The definition of "slips" in this dataset is a trip without a fall, which I believe is still relevant to the company's concern of fall-related safety. To reiterate, this dataset only records incidents that result in days away from work or job restriction, which I am generalizing to mean the incidents resulted in injury.

In 2023, the mean number of falls in non-office industries was 3361, and the mean for office industries was 2116. The mean number of slips in non-office industries was 949, and the mean was 695 for office industries (Figure 1). Non-office had, on average, about 1.5 times the number of falls and about 1.4 times more slips. This contradicts the previous claim of office workers being 2 to 2.5 times more likely than non-office workers to suffer an injury from a fall.

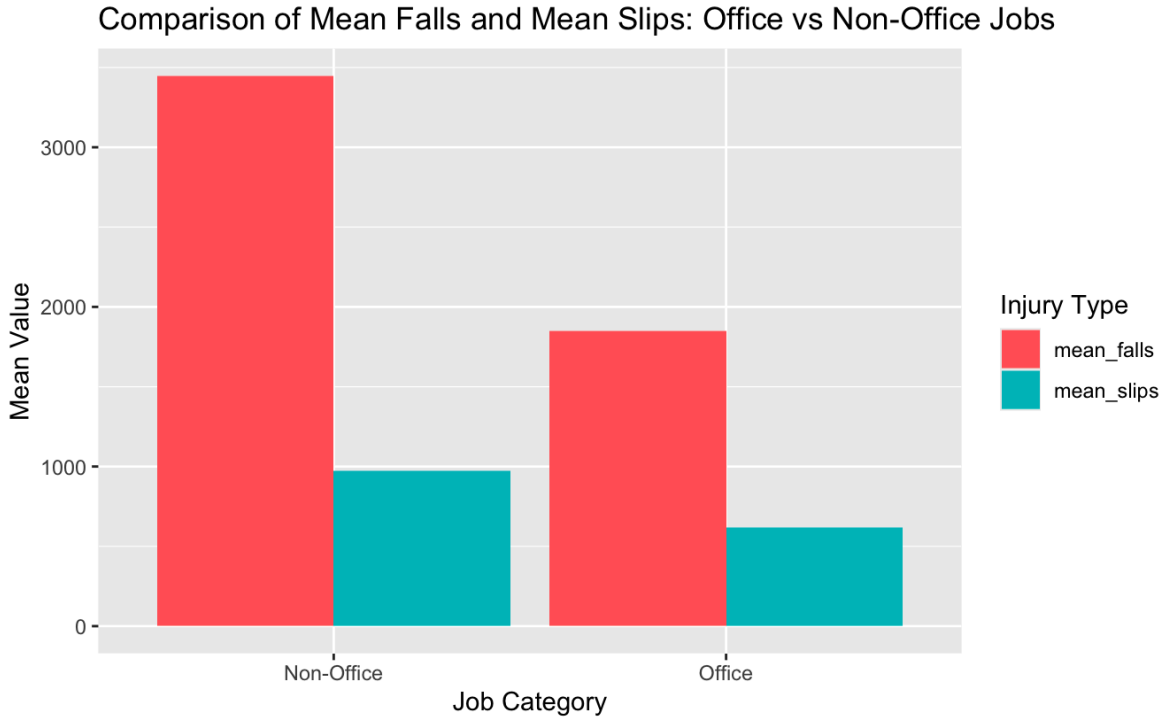

Figure 1: The mean number of slips and falls for both non-office and office industries. The mean number of falls/slips can also be interpreted as the mean number of injuries resulting from a workplace fall/slip.

C.2.2 Total Recordable Injury Cases

Non-office industries experienced a average rate of 3.06 workplace injuries, and office industries experienced an average of 0.93 workplace injuries. On average, non-office jobs reported was about 3.3 times the number of total recordable cases compared to office jobs (Figure 3).

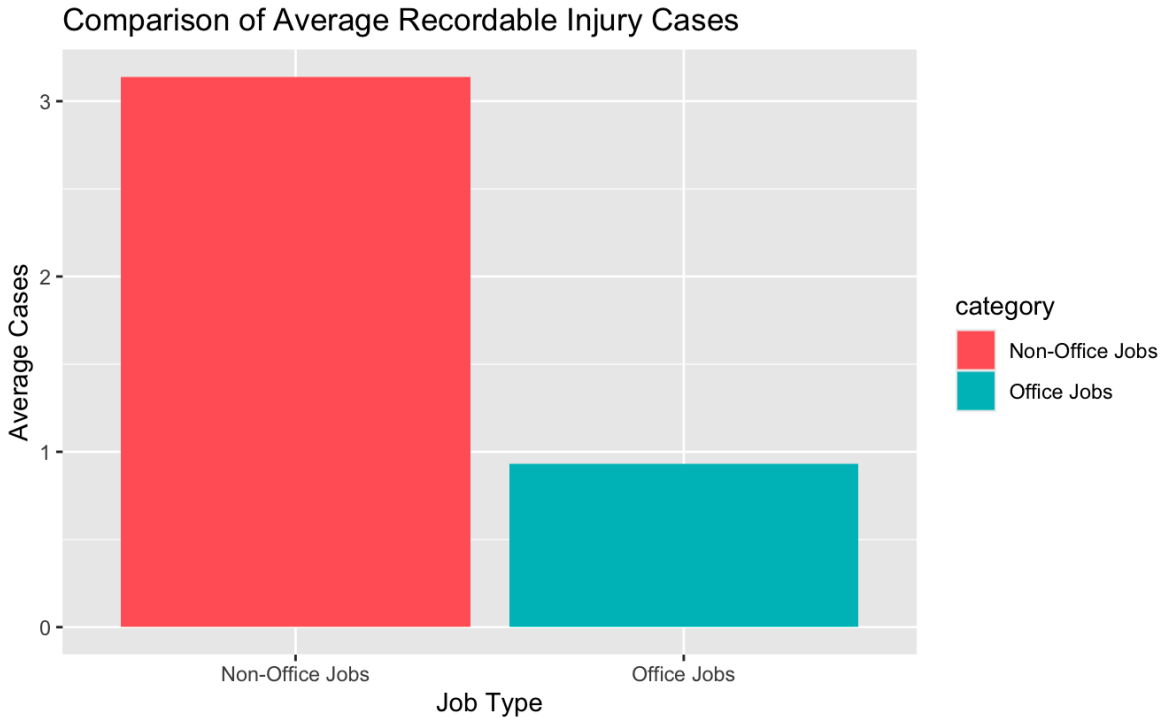

Figure 3: Average number of recordable injuries in both non-office and office industries in 2023

C.2.3 Injury Severity (Cases with Days Away from Work)

Non-office jobs also had a greater proportion of injuries resulting in time away from work. For non-office industries, the average number of injuries resulting in days away from work was 1.20. For office industries, the average was 0.36. Similarly to the total number of cases, the average for non-office industries was about 3.3 times larger than that of the office industries (Figure 4). This can be used to make inference on the average severity of the injuries that non-office workers and office workers are acquiring.

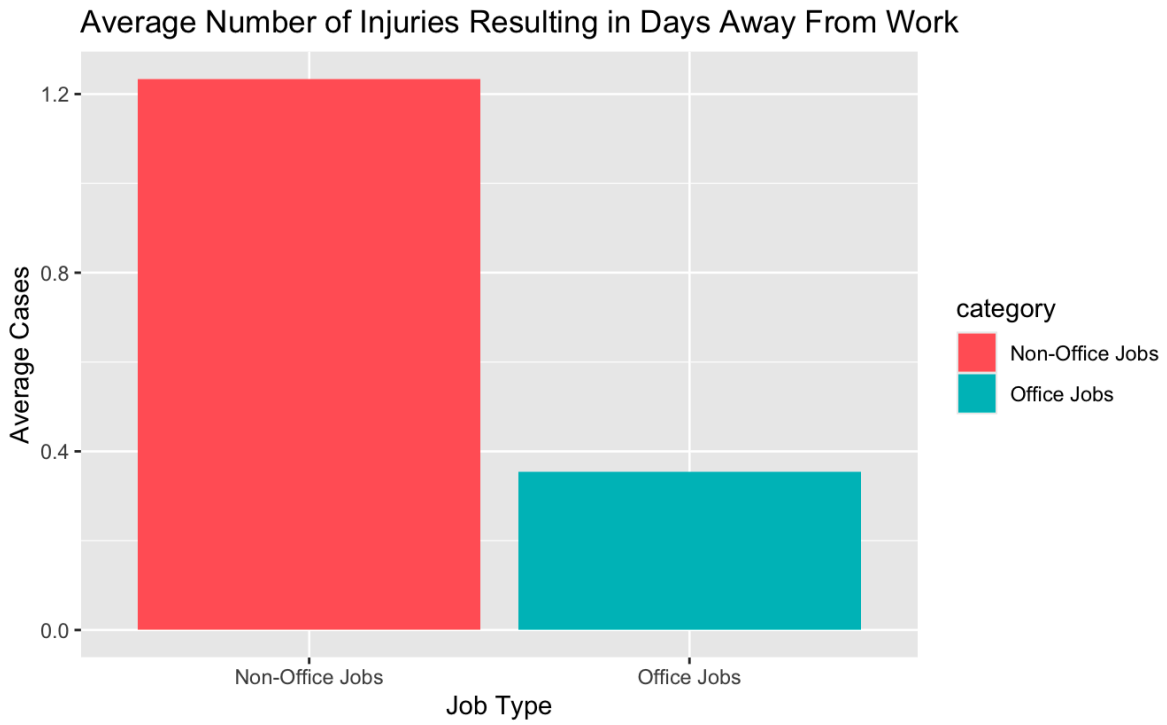

Figure 4: Average number of 2023 recordable injuries that resulted in days away from work in both non-office and office industries

C.2.4 Most Common Office Injuries

By visualizing the total reported injury cases (Figure 5), we can see the which type of injuries are most common. Falls on the same level are the second most common injury type reported in office spaces with 30,960 total cases in 2023.

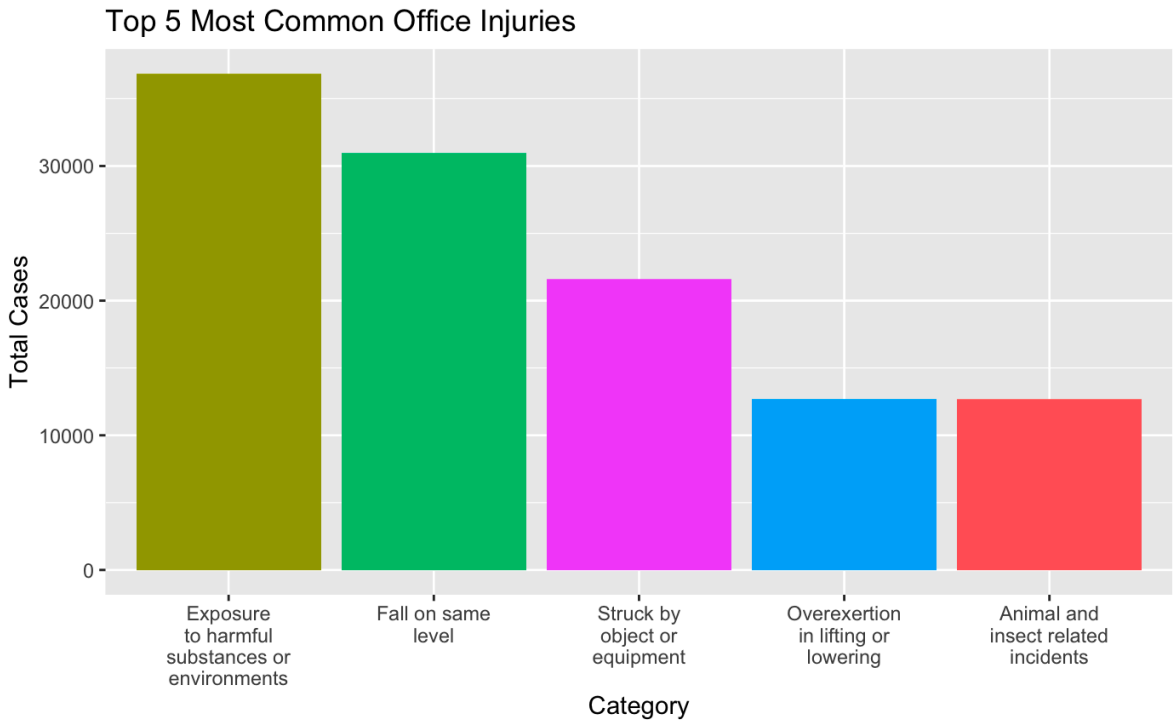

Figure 5: Total injury cases reported for office injuries by injury type. Only the 5 most common injury categories shown.

D Draft: Intro/Conclusions

Safety in the workplace is the most important priority for any company to have. No matter the industry, location, or project, taking measures to ensure workers are not at risk of injury is a necessity. It is both the responsibility of management and workers to stay informed and up-to-date with safety regulations. These rules and regulations can look very different industry to industry. In an office setting, some may think safety is not a prioritized concern, but that is far from the truth. Falls are the leading cause of injuries in an office setting U.S. Bureau of Labor Statistics (2021), and it is important to understand the risks, causes, and ways to reduce the probability of this type of injury.

A 2012 article from The Albert Einstein College of Medicine cited the Center of Disease Control and Prevention with the claim that "office workers are 2 to 2.5 times more likely to suffer an injury from a fall than non-office workers" (**WhatAreTop2012?**). An analysis into this claim may reveal insight on the source and interpretation of the original CDC data. It is possible this claim has two slightly different meanings:

1. Office workers are more likely to suffer an injury given they had a fall compared to non-office workers.
2. Office workers are more likely to have a fall that results in an injury compared to non-office workers.

In the original claim and this report, any reference to "falls" explicitly means falls on the same level, and excludes injuries resulting from falls to a different level (which are reported in separate categories in CDC and US Bureau survey data). The following analysis will compare the number of falls between office and non-office workers, and also the number of falls resulting in injury between the two groups. The difference between the two interpretations lead to two separate concerns: are office workers at higher risk of falling or higher risk of suffering an injury from a fall? It is also important to remember this data and claim is from 2012 at the latest, and the workplace has changed very much in the last decade.

While the claim may have held truth at the time, based on my research and analysis of 2023 CDC data, this claim is false in both interpretations. Non-office workers are about 1.5 times more likely to suffer an injury from a fall than an office worker.

E Conclusion

The evidence found using the US Bureau of Labor Statistics data supports an overwhelming conclusion that is opposite than that of the original claim. While the original CDC data was unavailable to public access, the available data used for this analysis is reliable and established.

Using the 2023 survey of occupational injuries, I found that non-office workers are about 1.5 times more likely to suffer an injury from a fall, and also 1.4 times more likely to slip without falling than an office worker U.S. Bureau of Labor Statistics (2021). This evidence directly opposes the original claim, and suggests that office workers are not at a higher risk of suffering injuries from falls than non-office workers. Generalizing to all types of injuries, I found that non-office industries have 3.3 times the number of recordable injuries compared to office industries U.S. Bureau of Labor Statistics (2023). Similarly, the same data revealed that non-office industries had 3.3 times the number of recordable injuries that specifically required days away from work. The rate of recordable injuries and total recordable injuries with time away from work suggests that not only are non-office workers more likely to be injured at work, but also that the severity distribution of these injuries are higher than the injuries of office workers. This evidence combined builds a strong case against any claim that office workers are more likely to suffer an injury from a fall than a non-office worker.

Here is another way to think about this main conclusion: If a construction site and an accounting office have the same number of falls, the severity of those falls likely vary drastically. In many ways, we would hope to see less falls in the construction site than the office, because of the associated risk in the setting. According to the CDC , we see the highest number of workplace falls and fall injuries in construction, educational and health services, ambulance services, building maintenance, and transportation services Centers for Disease Control and Prevention (CDC) (2024).

We should consider the fact that many industries filled predominantly by office jobs are partially exempt from OSHA record keeping because of the low incident rate Occupational Safety and Health Administration (OSHA) (2023). This may lead to a bias in the data regarding how many fall injuries are reported in office industries. On the other hand, many office workers may be less conscious of OSHA regulations, and therefore increase the likelihood of falls. Both these factors may lead to different kinds of bias in the data, which could be addressed in the future by more focused studies into office workplace injuries, and also a stress on following OSHA safety regulations in all workplaces.

It should be acknowledged that the definition of "office" jobs and industries is, at times, subjective, and categorizing all the recognized NAICS industries into the two groups is not a perfect system. Some jobs, such as real estate, may require workers to have an office but also include extensive work outside an office. While there could be a debate on some industries being included or not, I believe the evidence is conclusive enough for the variability to not make a significant difference. Future work could compare results from different combinations of NAICS codes to see by how much the final conclusion changes.

Despite the evidence that office workplaces are at much lower risk for falls and overall injuries, the second most common injury in offices is still falls on the same level U.S. Bureau of Labor Statistics (2021). Given that an office industry reports an injury, there is about an 18.5% chance the injury is a fall on the same level. The CDC cites the following reasons as the most common causes of falls in the workplace Centers for Disease Control and Prevention (CDC) (2024):

- Unprotected edges
- Unsafely positioned ladders
- Misused fall protection
- Water, grease, and other contaminants on the floor
- Clutter and tripping hazards in walkways
- Irregularities in the floor and wall openings

Appropriate steps taken in an office could greatly reduce the risk of any workers falling, such as safety training, proper use of ladders, and cleaning up/labeling any floor area with liquid on it. It is a company's responsibility to ensure all parts of the building are using accessible architecture (ramps, elevators, wide doorways, etc.) so no employees are put in a position to take unnecessary risks.

This report concludes with strong evidence to say that office workers are not at a higher risk to suffer an injury from a fall than non-office workers. That being said, office workers still face the risk of injury if proper safety regulations are not followed. Every company highly values the well-being of their employees, and should always take the proper steps to ensure a comfortable and safe work environment.

F Draft: Executive Summary

For the last sixty years, Halpert & Co. has prioritized the safety of its employees in all areas of the company. Due to a discovered research claim, there has been a recent rise in concern about the risk of injury in office spaces. A 2012 article from The Albert Einstein College of Medicine cited the Center for Disease Control and Prevention claiming that, "office workers are 2 to 2.5 times **more** likely to suffer an injury from a fall than non-office workers" (**WhatAreTop2012?**).

By analyzing 2023 survey data from the US Bureau of Labor Statistics, I found an opposing result of office workers being about 1.5 times **less** likely to suffer an injury from a fall than a non-office worker (U.S. Bureau of Labor Statistics 2021). Overall, non-office industries report 3.3 times the number of injuries as office industries and 3.3 times the number of injuries that result in needing time away from work (U.S. Bureau of Labor Statistics 2023). This result strongly suggests that non-office workers are at higher risk of being injured and suffering an injury of higher severity.

Despite the conclusion that office workers are at lower risk of injuries and falls, stronger safety policies in office spaces would not be a waste of time or resources. About 18.5% of all reported office injuries are falls on the same level, with the most common causes of the fall being misusing ladders, water or contaminants on floors, and tripping hazards in walkways (Centers for Disease Control and Prevention (CDC) 2024). Implementing safety training to use equipment and proper handling of spills and clutter hazards can significantly reduce the risk of fall injuries in the office.