Slightly Positive Correlation Between Racialization, Gendering and Police Strip Searches in the Toronto Municipal, 2020-2021*

Quang Mai

January 25, 2024

Police strip search has been a topic of great contention during the COVID-19 pandemic. The question commonly raised was how certain demographics are more likely to undergo strip searches than others, and why has this skewed power dynamics been maintained for so long. Data then was gathered from Open Data Toronto to assess the correlation between strip searches and the racial and gender identities of arrested 'suspects' in the Toronto Municipal from 2020 to 2021. In short, this paper finds that there is a slight positive correlation between police strip searches and the gendered and racialized Toronto demographic such as females or people of African descent. This analysis would enable us to rethink the modern form of policing, how it transpires in times of crisis and critically affects people of marginalized identities.

Table of contents

*Code and data are available at: https://github.com/ponolite/Police_Arrests_and_Strip_Searches/tree/main

1 Introduction

Recently, the Ford government has been at the forefront of public push-back in Toronto, due to their revisions of strip search laws under the Ministry of Correctional Services Act, R.S.O. 1990, c. M.22. Addressed by the Canadian Civil Liberties Association, the revisions "fall short…to ensure that prisoners are treated with basic respect" (O'Brien 2023). By definition, strip search is a police enforcement, which entails removing some or all articles of clothing to visually inspect a person's private body parts and see if they harbor any items like weapons or drugs (Data 2022). Surprisingly, while contended as a dehumanizing policing act, little has been done to assess strip search as a form of police power abuse in Toronto. This is especially relevant considering the city's racialized and gendered demographics, how strip searches most likely affect these social groups under the subtext of COVID-19 from 2020 to 2021 (Lemke 2022).

This paper thus inspects gender and racial identities of all Toronto police arrests from 2020 to 2021, and assesses if there is a correlation between marginalized identities and police strip searching. Foremost, this paper aims to be a form of data activism, contributing to the dialogue around police power abuse that enforces strip-search to undermine the the vulnerable populations in Toronto. To analyze, I first map out the distribution of Toronto police arrests by race and gender and reasons for strip searching from 2020 to 2021 using summary tables, stacked histograms and bubble charts. Particularly, for each category of race and gender, the distribution bars or points would be sectioned into various categories like 'including strip searches' or 'not including' to visualize the statistics of strip searching against intersecting social identities. It's worth noting that this dataset may already contain much racial and gender bias, because it was retrieved from the very source that this paper is questioning: the Toronto Police Services (Lemke 2022). Then, the findings presented might not fully encapsulate the actual landscape of strip searching in Toronto from 2020 to 2021. Nonetheless, it's still worth looking at due the precedents of police power abuse (Allen and Yang 2020).

This paper is organized into the following sections: Data, Results, Discussion, and Conclusion. First, the Data section divulges the nature of the dataset obtained from Open Data Toronto and how data cleaning and extraction took place (Data 2022). Then, all the trends and findings discovered are shown in the Results section, while the Discussion section further assesses these findings. Ultimately, the Conclusion section summarizes the paper's main insights.

2 Data

The data package used for analysis was sourced from the Open Data Toronto Portal under the library `opendatatoronto` (Gelfand 2022). Only one dataset was retrieved from the data package to examine the racial and gender identities of Toronto police arrests from 2020 to 2021, which is the package `Police Race and Identity Based Data - Arrests and Strip Searches` (Data 2022). Data was generated, extracted and cleaned using the open-source statistical programming language R (R Core Team 2022), leveraging functions from `tidyverse` (Wickham et al. 2019), `ggplot2` (Wickham 2016), `dplyr` (Wickham et al. 2022), `readr` (Wickham, Hester, and Bryan 2022), `tibble` (Müller and Wickham 2022), `here` (Müller 2020), `ggrepel` (Slowikowski 2024), janitor`[@rJanitor],`kableExtra`[@rKableExtra],`naniar`[@rNaniar]` and`knitr‘ (Xie 2014).

2.1 Overview of Data Extraction and Cleaning

Published by Toronto Police Services, this primary dataset conveys information related to all police arrests and strip searches from 2020 to 2021 (which halted refreshing on December 2, 2022). Originally, the dataset features 26 variables, including date of arrest, event id, the arrested person's race, sex, and age group, arrest location, whether the arrest includes strip searching, the person's action at the time of arrest, and the police's reason for strip searching along with any items found. Data of strip searches are lodged based on each police arrest throughout 2020 and 2021, using a unique identifier called `event_id` which identifies the nature of the strip search and the social identities of the people involved. No other dataset was considered for the paper but this one, since it's the only dataset that communicates information on police enforcement of strip searching.

Informative as it is, the dataset contains much naming inconsistency and many variables outside the scope of this paper. Thus, in order to conduct an intersectional—or gender and race—analysis of police strip searches, I have to further clean this dataset and split it into two smaller datasets. Additional details on data extraction and cleaning will be specified in subsequent sections.

2.2 Racial and Gender Identities of Police Strip Search

Most relevant to the paper are the variables on the racial and gender identities of people who were arrested and then strip-searched. To streamline this data, the names within the original dataset are simplified and then the dataset is split into a smaller dataset containing relevant columns (see 1). This dataset entails demographic and strip search-relevant information for each police arrest event, such as race, gender, whether the event involves a strip search, and if it is a strip search, are there any items found.

Table 1: Sample of Race and Gender Data against Police Arrests with Strip Searches

ID	Race	Gender	Strip Search	Items Found
1005907	White	M	No	NA
1014562	White	M	No	NA
1029922	Unknown or Legacy	M	No	NA
1052190	Black	M	No	NA
1015512	South Asian	M	No	NA
1019145	South Asian	M	No	NA

Specifically, the column 'Strip Search' signifies whether an arrest involves strip search. As for the 'Items Found' column, either a `1` or a `0` will appear in a data cell if the 'Strip Search' value of an event is a `1`. This is because the items found within a strip search is only available when a police arrest does involve strip searching.

2.3 Reasons for Police Strip Search

To further inspect the nature of each strip search, reasons for strip searching prove a vital data source. Thus, this dataset–another sub-dataset split from the orginal raw data–conveys all police arrests that involve strip searching and the reasons behind strip searching. Under close examination, the naming of individual data cells from the original, raw dataset is quite disordered, for instance, using `None` and `XX` in place of the usual `NA` to differentiate between variables. Thus, all inconsistent data cells were renamed to streamline the naming conventions and data processing later on. After renaming, the big dataset was refined into containing relevant columns (see 2). Then, for this particular dataset, all instances of police arrests without strip searching are dropped using the `filter()` function, along with a `!is.na()` function for all `reason` variables with `NA` as their values.

Except for "ID" variable, the four other variables in this new dataset are reasons to account for why the Toronto police force conducts strip search under certain arrests (see 2). For instance, "Reason - Assist Escape" is for people who may have helped other suspects escape and "Reason - Possess Evidence" is for people who are suspected of harboring items like drugs or an alibi. For each "Reason" variable, if the data cell contains `0`, this means that strip search happens for other reasons beside this particular one. Vice versa, if it contains `1`, this means strip search happens because of this very reason. In addition, a new column called "Total Reasons" is added to sum all reasons used to account for each strip search. To do this, `mutate()` is utilized, where all instances of `1` and `0` are changed into numeric with `as.numeric()` and then summed together.

Table 2: Sample of Reasons for Police Strip Searches Data

ID	Reason - Injury	Reason - Escape	Reason - Weapons	Reason - Has Evidence	Items_Found	Total Reasons
1039002	1	1	1	0	0	3
1045382	1	1	1	0	0	3
1041209	1	0	0	0	0	1
1026070	0	0	1	1	0	2
1028958	1	0	1	0	0	2
1026364	1	0	0	0	0	1

3 Results

3.1 Racialized and Gendered Police Strip Searches Statistics

To encapsulate, throughout 2020 and 2021, there are a total of 7801 recorded strip searches out of 65276 incidents of police arrests, which accounts for a whooping 12% of all arrests (see Table 5). Excluding those whose racial identities are unknown and non-existent, by percentage, the three most affected racial groups are, in descending order, of Indigenous, Black and White ethnic roots, standing at 16%, 14% and 13% each (see Table 3). Gender-wise, men are more likely to be strip searched compared to women, at 12% and 10% respectively (see Table 4). Though, observably, the difference is quite marginal. To note, people of unidentified gender identity aren't strip searched at all according to the dataset (denoted as `U` in the tables and graphs).

Particularly, accounting for the discrepancies between counts of strip search grouped by different racial and gender identities are challenging. This is due to the incongruous population spread of each racial and gender group within Toronto. For instance, a major 44.3% of Toronto population is white people (Canada 2022), thus it's more probable that the people arrested and strip searched by the police force are largely `white` in the dataset (see @ 3) As such, to render the data statistically proportionate to one another, `mutate()`was largely used to create new variables that are mostly percentage values. Admittingly so, this enables each variable to be on common grounds when compared with one another.

In addition, a new column called "Total Reasons" totals all reasons used to account for each police strip search is added with `mutate()`, where all instances of `1` and `0` are changed into numeric with `as.numeric()` and then summed together. to ensure that all data are comparative to one another

Table 3: Summary Statistics of Racialized Police Strip Searches

Race	Strip Search	Count	Percentage	Total Arrests
Black	No	15092	86	17526
Black	Yes	2434	14	17526
East/Southeast Asian	No	4074	92	4415
East/Southeast Asian	Yes	341	8	4415
Indigenous	No	1628	84	1934
Indigenous	Yes	306	16	1934
Latino	No	1636	93	1768
Latino	Yes	132	7	1768
Middle-Eastern	No	3009	93	3237
Middle-Eastern	Yes	228	7	3237
None	No	3	75	4
None	Yes	1	25	4
South Asian	No	3356	93	3613
South Asian	Yes	257	7	3613
Unknown or Legacy	No	4520	89	5056
Unknown or Legacy	Yes	536	11	5056
White	No	24157	87	27723
White	Yes	3566	13	27723

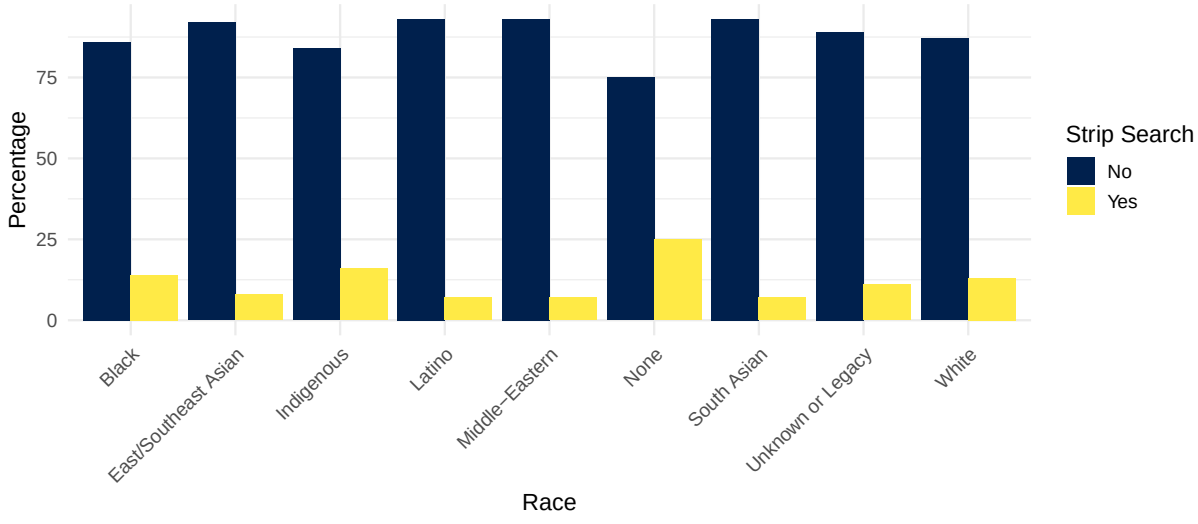


Figure 1: Racial Identities and Police Strip Search Per Arrest in Toronto, 2020-2021

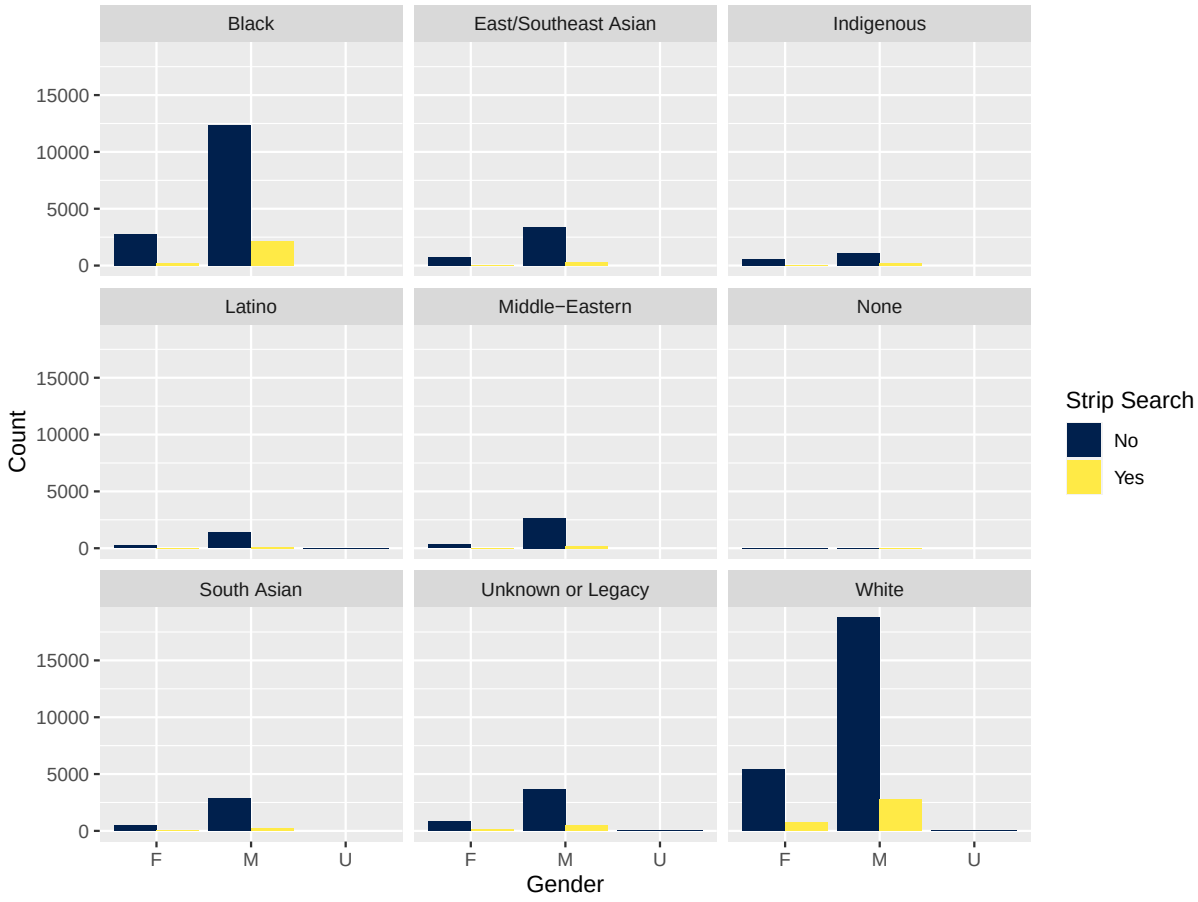


Figure 2: Racial Identities and Police Strip Search Per Arrest in Toronto, 2020-2021

Table 4: Summary Statistics of Gendered Police Strip Searches

Gender	Strip Search	Count	Percentage	Total Arrests
F	No	11334	90	12617
F	Yes	1283	10	12617
M	No	46132	88	52650
M	Yes	6518	12	52650
U	No	9	100	9

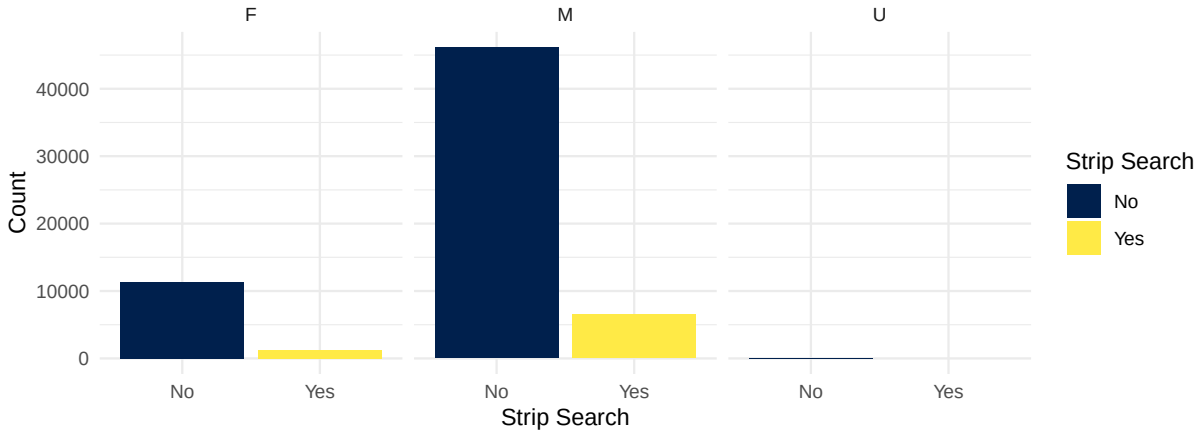


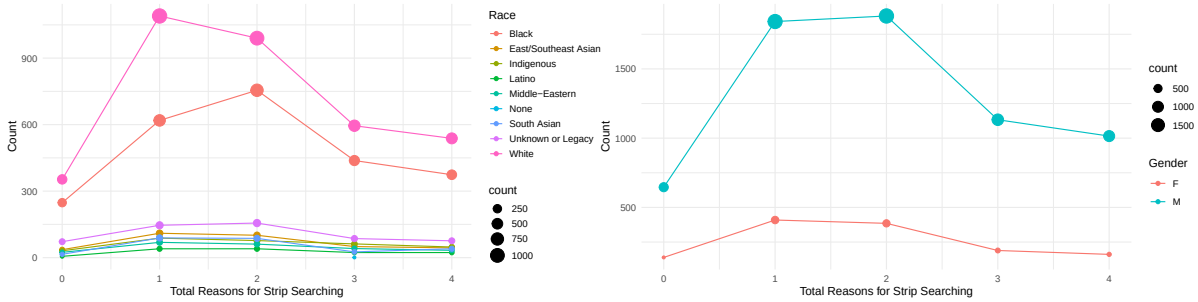
Figure 3: Gender Identities and Police Strip Search Per Arrest in Toronto, 2020-2021

Table 5: Summary Statistics of Items Found During Police Strip Searches

Strip Search	Items Found	Count	Total Searches	Percentage of Items Found
Yes	0	4890	7801	63
Yes	1	2911	7801	37

3.2 Police Strip Searches and Items Found Statistics

As for reasons of strip searching provided by the Toronto Police Services and items found along these strip searches, there is a substantial 10% of strip searches being conducted without any reason (see Table 6). Most commonly, strip searches are carried out under at least 1 or 2 reasons, both at 29% (see Table 6). Overall, most of strip search enforcement doesn't garner any items in question from the people who were suspected by the police. Specifically, a whooping 63% of strip searches don't have any items found (see Table 5).



(a) Race

(b) Gender

Figure 4: Relationship Between Reasons for Strip Search and Race in Toronto, 2020-2021

Table 6: Summary Statistics of Reasons for Police Strip Searches

Total Reasons	Items Found	Count	Percentage by Reasons	Total Searches	Percentage by Searches
0	0	465	59	785	10
0	1	320	41	785	10
1	0	1527	68	2251	29
1	1	724	32	2251	29
2	0	1384	61	2267	29
2	1	883	39	2267	29
3	0	778	59	1322	17
3	1	544	41	1322	17
4	0	736	63	1176	15
4	1	440	37	1176	15

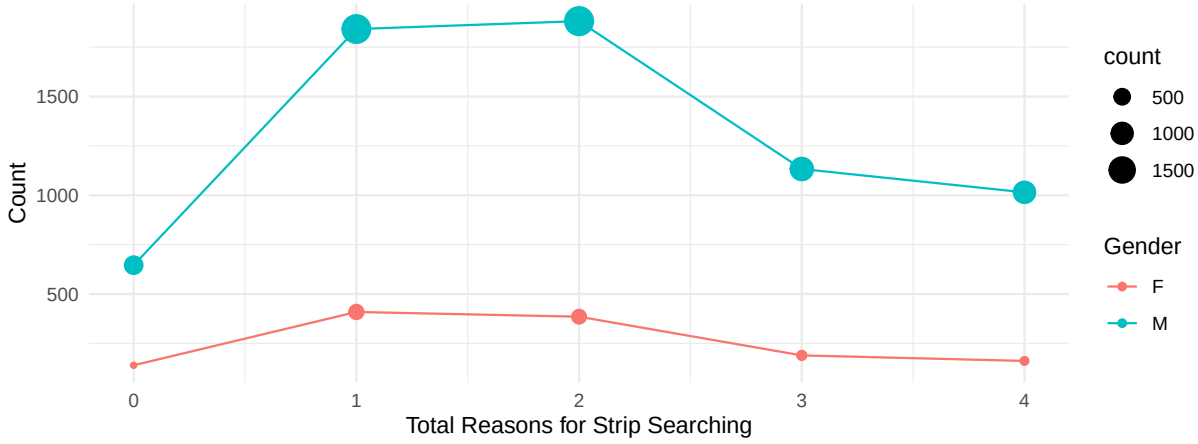


Figure 5: Relationship Between Reasons for Strip Search and Gender in Toronto, 2020-2021

4 Discussion

binaristic view of gender

mystified, how is race sectioned and divided

biased source, observation

lack tornotno ethnic demofraphic data to actually compare and contrast if the perecentage of strip search is correlated to the population spread

5 Conclusion

6 LLMs

Statement on LLM usage: no Learning Management Systems (LMSs) were solicited during the writing of this paper.

References

Allen, Kate, and Jennifer Yang. 2020. "Police Violence and COVID-19 Fuel a Push to Declare Anti-Black Racism a Public Health Crisis." https://www.thestar.com/news/canada/police-violence-and-covid-19-fuel-a-push-to-declare-anti-black-racism-a-public/article_8585a5a0-703c-5746-8d4a-fec334b8a0d8.html.

Canada, Statistics. 2022. "2021 Census: Citizenship, Immigration, Ethnic Origin, Visible Minority Groups (Race), Mobility, Migration, Religion." https://www.toronto.ca/wp-content/uploads/2023/03/8ff2-2021-Census-Backgrounder-Immigration-Ethnoracial-Mobility-Migration-Religion-FINAL1.1-corrected.pdf.

Data, Toronto Open. 2022. "Police Race and Identity Based Data - Arrests and Strip Searches." https://open.toronto.ca/dataset/police-race-and-identity-based-data-collection-arrests-strip-searches/.

Gelfand, Sharla. 2022. *Opendatatoronto: Access the City of Toronto Open Data Portal*. https://CRAN.R-project.org/package=opendatatoronto.

Lemke, Monika. 2022. "Strip Searches Are Ineffective, Unnecessary and Target Racialized Canadians." https://theconversation.com/strip-searches-are-ineffective-unnecessary-and-target-racialized-canadians-185187.

Müller, Kirill. 2020. *Here: A Simpler Way to Find Your Files*. https://CRAN.R-project.org/package=here.

Müller, Kirill, and Hadley Wickham. 2022. *Tibble: Simple Data Frames*. https://CRAN.R-project.org/package=tibble.

O'Brien, Abby. 2023. "Advocates Slam Ford Government's Revisions to Ontario Strip Search Laws, Demand Immediate Reform." https://toronto.ctvnews.ca/recent-changes-made-to-ontario-strip-search-laws-are-woefully-inadequate-ccla-1.6537737?cache=tzbrsjtr.

R Core Team. 2022. *R: A Language and Environment for Statistical Computing*. Vienna, Austria: R Foundation for Statistical Computing. https://www.R-project.org/.

Slowikowski, Kamil. 2024. *Ggrepel: Automatically Position Non-Overlapping Text Labels with 'Ggplot2'*. https://ggrepel.slowkow.com/.

Wickham, Hadley. 2016. *Ggplot2: Elegant Graphics for Data Analysis*. Springer-Verlag New York. https://ggplot2.tidyverse.org.

Wickham, Hadley, Mara Averick, Jennifer Bryan, Winston Chang, Lucy D'Agostino McGowan, Romain François, Garrett Grolemund, et al. 2019. "Welcome to the tidyverse." *Journal of Open Source Software* 4 (43): 1686. https://doi.org/10.21105/joss.01686.

Wickham, Hadley, Romain François, Lionel Henry, and Kirill Müller. 2022. *Dplyr: A Grammar of Data Manipulation*. https://CRAN.R-project.org/package=dplyr.

Wickham, Hadley, Jim Hester, and Jennifer Bryan. 2022. *Readr: Read Rectangular Text Data*. https://CRAN.R-project.org/package=readr.

Xie, Yihui. 2014. "Knitr: A Comprehensive Tool for Reproducible Research in R." In *Implementing Reproducible Computational Research*, edited by Victoria Stodden, Friedrich Leisch, and Roger D. Peng. Chapman; Hall/CRC. http://www.crcpress.com/product/isbn/9781466561595.