Seasonal Variation in Marriage License Applications*

An Exploratory Analysis with Open Data Toronto

Fatimah Yunusa

September 24, 2024

IN PROGRESS What was done:Marriage License data from Toronto between 2011 and 2024 was analysed to determine weather holidays influence the number of applications. What was found: Months associated with popular holidays like February (Valentine's day) and December(Christmas), show an increase in marriage license applications. Why this matters:Understanding these patterns can help city officials anticipate changes in demand for marriage-related services and allocate resources accordingly, ensuring that civil centers are prepaered for these seasonal shifts. It also gives us an insight into how emotional and culturl influences during holidays can drive personal descisions.

1 Introduction

The Data Section 2 of this paper explores the `opendatatoronto` data and outlines tools and methods used to analyze the data and some preliminary observations observed. The Results Section 3 introduces more observations found from the data analysis. The Discussion Section 4 ties back the findings to its real world relevance. Lastly, the Conclusion Section 5 summarizes key findings and outlines future areas of study.

2 Data

2.1 Tools

We use R Core Team (2024) and Gelfand (2022) * `ggplot2` (Wickham 2016) * `dplyr` (Wickham et al. 2023) * `readr` (Wickham, Hester, and Bryan 2024) * `tibble` (Müller and Wickham

---

*Code and data are available at: https://github.com/fatimahsy/Pandemic-Marriages-.git.

2023)

2.2 Dataset Overview

Some of our data is of Marriage licences (Figure 1) from Gelfand (2022).

2.3 Variable Descriptions

2.4 Basic Summary Statistics of the Data

The scatter plot (Figure 1) displays the number of marriage licenses issued in Toronto over time, spanning from before 2015 to approximately 2025. .
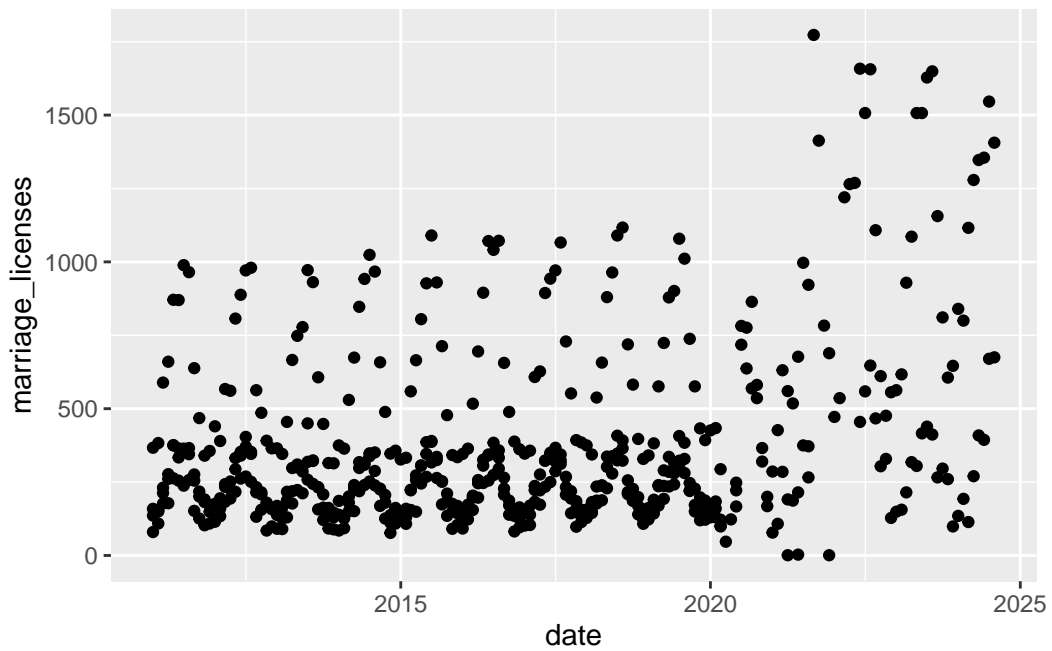

Figure 1: Marriage Licinces By Date

3 Results

4 Discussion

5 Conclusion

" '

Appendix

References

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

Müller, Kirill, and Hadley Wickham. 2023. *Tibble: Simple Data Frames.* https://CRAN.R-project.org/package=tibble.

R Core Team. 2024. *R: A Language and Environment for Statistical Computing.* Vienna, Austria: R Foundation for Statistical Computing. https://www.R-project.org/.

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

Wickham, Hadley, Romain François, Lionel Henry, Kirill Müller, and Davis Vaughan. 2023. *Dplyr: A Grammar of Data Manipulation.* https://CRAN.R-project.org/package=dplyr.

Wickham, Hadley, Jim Hester, and Jennifer Bryan. 2024. *Readr: Read Rectangular Text Data.* https://CRAN.R-project.org/package=readr.