My title*

My subtitle if needed

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First sentence. Second sentence. Third sentence. Fourth sentence.

Table of contents

*Code and data are available at: LINK.

1 Introduction

You can and should cross-reference sections and sub-sections. We use R Core Team (2024) and (**rohan?**).

The remainder of this paper is structured as follows. Section 2….

This paper begins with an Introduction framing the impact of economic downturns on work hours. It is followed by the Data section detailing methodology and cleaning efforts. In the Results, we analyze work hours and nonresponse rates, leading to the Discussion on labour market responses to crises, including the impact of COVID-19, and addressing ethical issues. We later acknowledge our paper's Limitations, suggest paths for Future Research, especially on enhancing response rates, and conclude with a synthesis of our insights. The Appendix provides further survey information.

2 Data

The paper uses data collected from the US General Social Survey (GSS) from NORIC at the University of Chicago ("General Social Survey" 2024). From the dataset, this paper focuses on the "number of hours worked last week" variable, from the years 1992 to 2022. This longitudinal approach allows us to compare labour dynamics across different economic downturns, including the 1998 Asian Financial Crisis, the 2008 Global Financial Crisis, and the COVID-19 pandemic in 2020.

2.1 Source Data

The data was downloaded and filtered for the selected variables from the selected data variables from GSS[1]. The data cleaning was performed based on value definitions as defined in the GSS codebooks (NORC 2018). One of the variable names `response` is renamed to be more informative (Table 1).

For the analysis, we retrieved the following data as described in Table 1.

[1]https://gss.norc.org/documents/stata/GSS_stata.zip

Table 1: Source data retrieved from GSS

Variable	New Name	Description	Example
ID_	id	Response ID	1
YEAR	year	Year of the Data Recorded	1977
SEX	sex	Respondent's gender	Female
AGE	age	Respondent's age	25
HEALTH	health	Respondents' health condition	Good
PHYSHLTH	phys_days	Days of Respondents' physical health being not good	15
MNTLHLTH	ment_days	Days of Respondents' mental health being not good	20
DEPRESS	depress	Whether respondents have been told having depression	Yes

2.2 Data Cleaning

The data was cleaned by using the open source statistically programming language R (R Core Team 2024), with libraries `tidyverse` (Wickham et al. 2019), `ggplot2` (Wickham 2016), `dplyr` (Wickham et al. 2022), `readr` (Wickham, Hester, and Bryan 2022), `tibble` (Muller and Wickham 2022), `here` (Müller 2020), `kableExtra` (Zhu 2021), `janitor` (Firke 2023), and `knitr` (Xie 2014).

2.3 Survey Methodology

some words

2.4 Demographic Variables

Table 2: Counted days of Physical and Mental unwellness of Population by Age and Gender Group

ID	Gender	Age	Physical Unwellness	Mental Unwellness	Age Cohort
1	Female	25	0	0	20-39
2	Male	43	0	0	40-59
3	Female	30	0	2	20-39
4	Female	55	0	0	40-59
5	Male	37	0	30	20-39

6	Male	47	0	0	40-59

3 Model

The goal of our modelling strategy is twofold. Firstly,…

Here we briefly describe the Bayesian analysis model used to investigate… Background details and diagnostics are included in Appendix B.

3.1 Model set-up

Define y_i as the number of seconds that the plane remained aloft. Then β_i is the wing width and γ_i is the wing length, both measured in millimeters.

$$y_i|\mu_i, \sigma \sim \text{Normal}(\mu_i, \sigma) \tag{1}$$
$$\mu_i = \alpha + \beta_i + \gamma_i \tag{2}$$
$$\alpha \sim \text{Normal}(0, 2.5) \tag{3}$$
$$\beta \sim \text{Normal}(0, 2.5) \tag{4}$$
$$\gamma \sim \text{Normal}(0, 2.5) \tag{5}$$
$$\sigma \sim \text{Exponential}(1) \tag{6}$$

We run the model in R (R Core Team 2024) using the `rstanarm` package of (**rstanarm?**). We use the default priors from `rstanarm`.

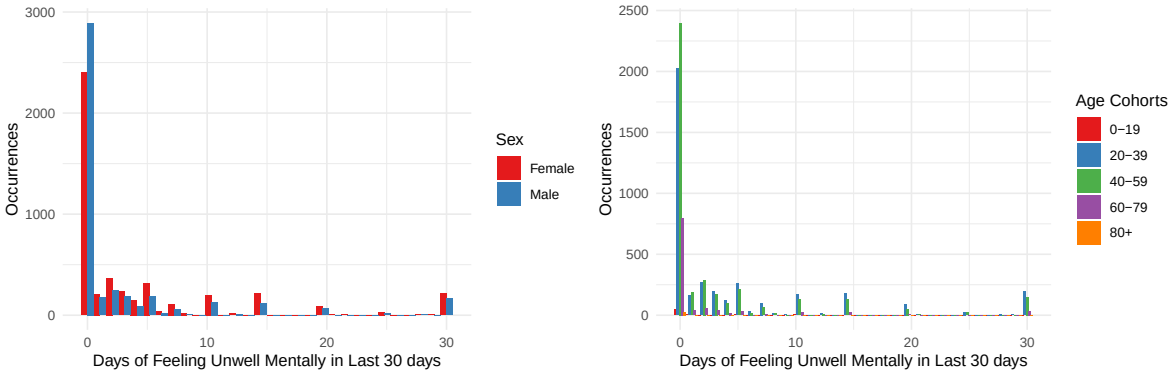
3.1.1 Model justification

We expect a positive relationship between the size of the wings and time spent aloft. In particular…

We can use maths by including latex between dollar signs, for instance θ.

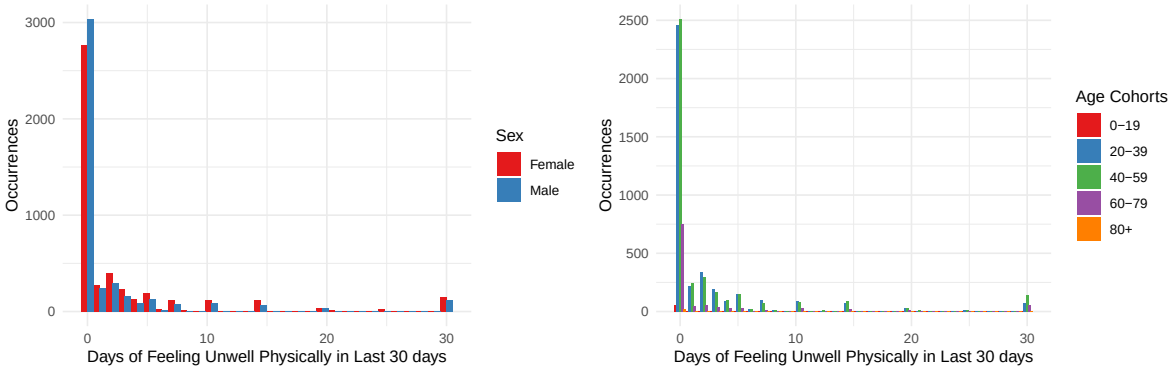
4 Results

Our results are summarized in **?@tbl-modelresults**.



(a) Gender (b) Age cohorts

Figure 1: Gender and Age of People Apprehended Visulization Year-Depended



(a) Gender (b) Age cohorts

Figure 2: Gender and Age of People Apprehended Visulization Year-Depended22

5 Discussion

5.1 First discussion point

If my paper were 10 pages, then should be be at least 2.5 pages. The discussion is a chance to show off what you know and what you learnt from all this.

5.2 Second discussion point

5.3 Third discussion point

5.4 Weaknesses and next steps

Weaknesses and next steps should also be included.

A Appendix

A.1 Additional data details

B Model details

B.1 Posterior predictive check

In **?@fig-ppcheckandposteriorvsprior-1** we implement a posterior predictive check. This shows…

In **?@fig-ppcheckandposteriorvsprior-2** we compare the posterior with the prior. This shows…

B.2 Diagnostics

?@fig-stanareyouokay-1 is a trace plot. It shows… This suggests…

?@fig-stanareyouokay-2 is a Rhat plot. It shows… This suggests…

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