Model Analysis

Ikramul H Khan

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```r
# Set CRAN mirror and install missing packages
options(repos = c(CRAN = "https://cran.r-project.org"))

packages <- c("survey", "srvyr", "dplyr", "haven")
installed <- rownames(installed.packages())
for (pkg in packages) {
  if (!(pkg %in% installed)) install.packages(pkg)
}

# Load libraries
library(haven)
library(dplyr)
```

```
##
## Attaching package: 'dplyr'

## The following objects are masked from 'package:stats':
##
##     filter, lag

## The following objects are masked from 'package:base':
##
##     intersect, setdiff, setequal, union
```

```r
library(survey)
```

```
## Loading required package: grid

## Loading required package: Matrix

## Loading required package: survival

##
## Attaching package: 'survey'

## The following object is masked from 'package:graphics':
##
##     dotchart
```

```r
library(srvyr)
```

```
##
## Attaching package: 'srvyr'

## The following object is masked from 'package:stats':
##
##     filter
```

```r
# Open the dataset
BDHS <- read_sav("adolescent fertility new_1.SAV")

# Prepare variables
BDHS <- BDHS %>%
  mutate(
    education = as_factor(V106),
    partner_education = as_factor(V701),
    division = as_factor(V024),
    residence = as_factor(V025),
    religion = as_factor(V130),
    wealth = as_factor(V190),
    age = as_factor(V012),
    age_gap = as_factor(Age_Gap),
    contraceptive_status = as_factor(V312New),
    WomenEmpowerment = as_factor(WomenEmpowerment),
    weight = V005 / 1000000
  )
# Create survey design object
bdhs_design <- BDHS %>%
  as_survey_design(
    ids = V001,
    strata = V023,
    weights = weight,
    nest = TRUE
  )

# For strata with single PSU
options(survey.lonely.psu = "adjust")
# Variables to summarize
vars_to_summarize <- c(
  "education", "partner_education", "division", "residence", "religion",
  "wealth", "contraceptive_status", "age", "age_gap", "WomenEmpowerment"
)

# Function to summarize each variable
get_summary <- function(var) {
  bdhs_design %>%
    group_by(value = .data[[var]]) %>%
    summarise(
      n = unweighted(n()),
      percent = survey_mean(proportion = TRUE, na.rm = TRUE) * 100,
      .groups = "drop"
    ) %>%
```

```
    mutate(variable = var) %>%
    select(variable, category = value, n, percent)
}

# Apply and combine
descriptive_table <- bind_rows(lapply(vars_to_summarize, get_summary))
```

```
## Warning: There was 1 warning in `dplyr::summarise()`.
## i In argument: `percent = survey_mean(proportion = TRUE, na.rm = TRUE) * 100`.
## i In group 1: `value = No education`.
## Caused by warning:
## ! na.rm argument has no effect on survey_mean when calculating grouped proportions.
## This warning is displayed once per session.
```

```
# View table
print(descriptive_table)
```

```
## # A tibble: 35 x 4
##    variable          category         n percent
##    <chr>             <fct>        <int>   <dbl>
##  1 education         No education    40    1.37
##  2 education         Primary        339   14.6
##  3 education         Secondary     1879   76.9
##  4 education         Higher         191    7.11
##  5 partner_education No education   117    4.85
##  6 partner_education Primary        429   17.9
##  7 partner_education Secondary     1541   62.9
##  8 partner_education Higher         362   14.3
##  9 division          Barishal       271    2.98
## 10 division          Chattogram     340    5.36
## # i 25 more rows
```

```
# Export as CSV
write.csv(descriptive_table, "descriptive_table.csv", row.names = FALSE)

# Optional: Export as Word (requires officer/flextable, let me know if needed)
```