



# CONTRACEPTIVE USE IN INDONESIA

(in 1987)

# ABOUT THE DATASET

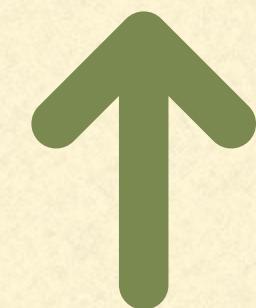
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- **SAMPLE OF 1,473 WOMEN RESPONDENTS, WITH 10 ATTRIBUTES**
  - **TARGET = CONTRACEPTIVE METHOD**  
EXPLORED AS BOTH A MULTICLASS AND BINARY.  
FINAL MODEL EVALUATED ON BINARY
  - SOURCED FROM THE 1987 NATIONAL INDONESIA CONTRACEPTIVE PREVALENCE SURVEY (NICPS)  
WHICH WAS DRAWN FROM THE ANNUAL NATIONAL SOCIOECONOMIC SURVEY (SUSENAS)  
CONDUCTED IN JANUARY AND FEBRUARY 1987
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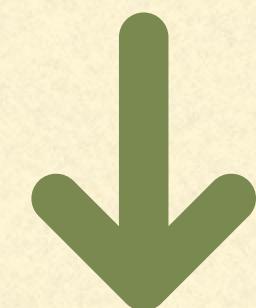
# MOTIVATION

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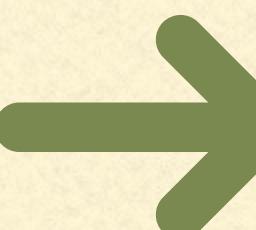
Through an analysis of contraceptive access, we hope that we may...



**IMPROVE** Standard of Living



**REDUCE** Maternal & Infant Mortality Rates

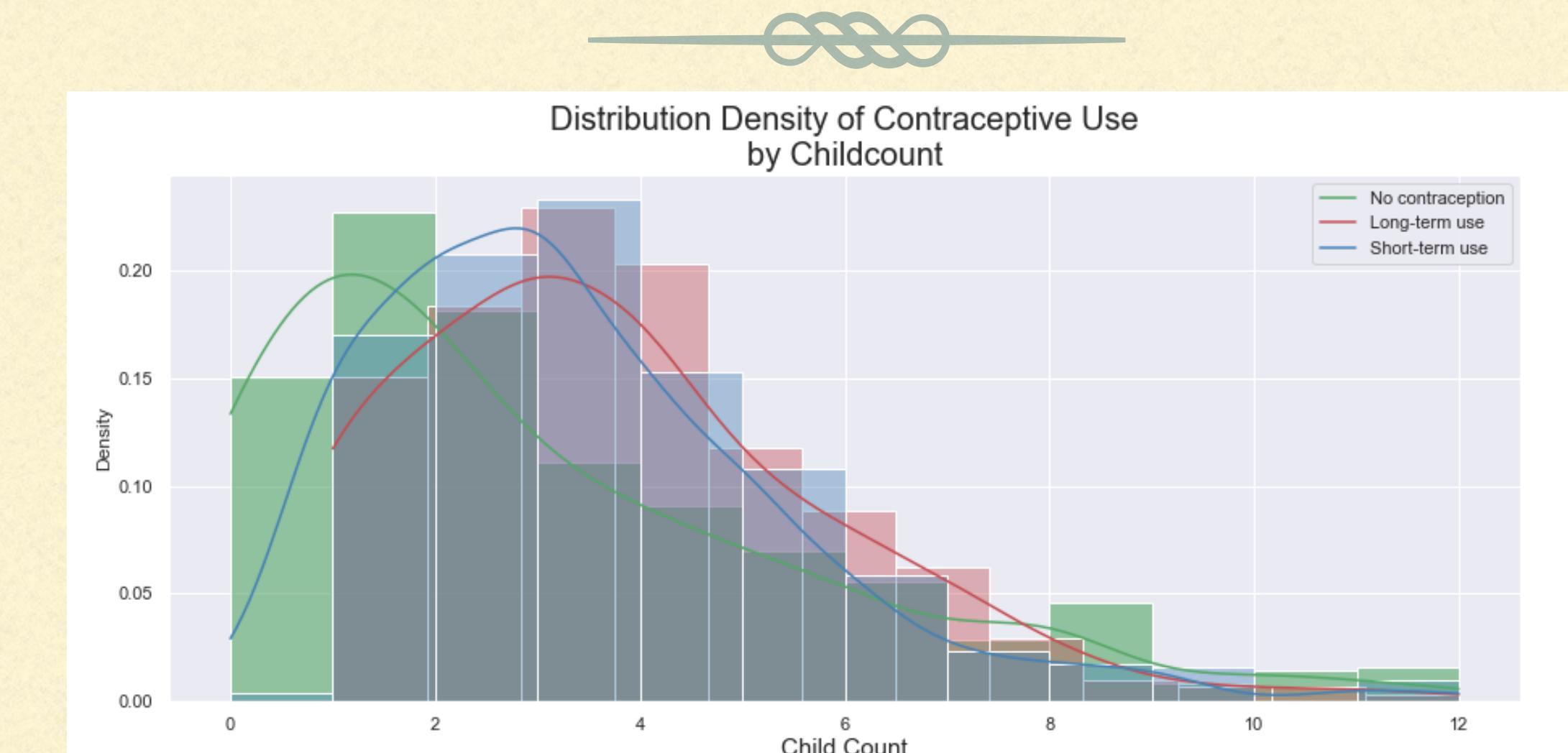
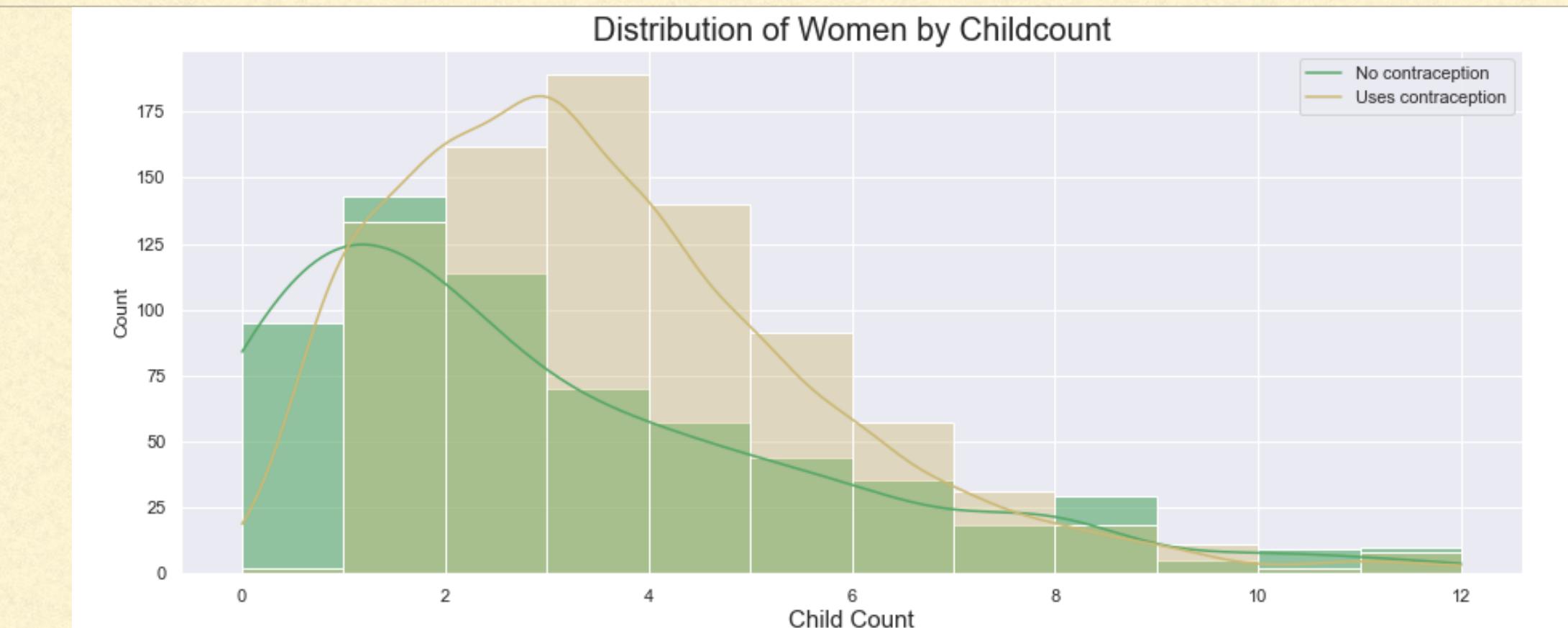


**FACILITATE** Manageable Public Health Policy  
& Autonomy in Healthcare for all individuals.

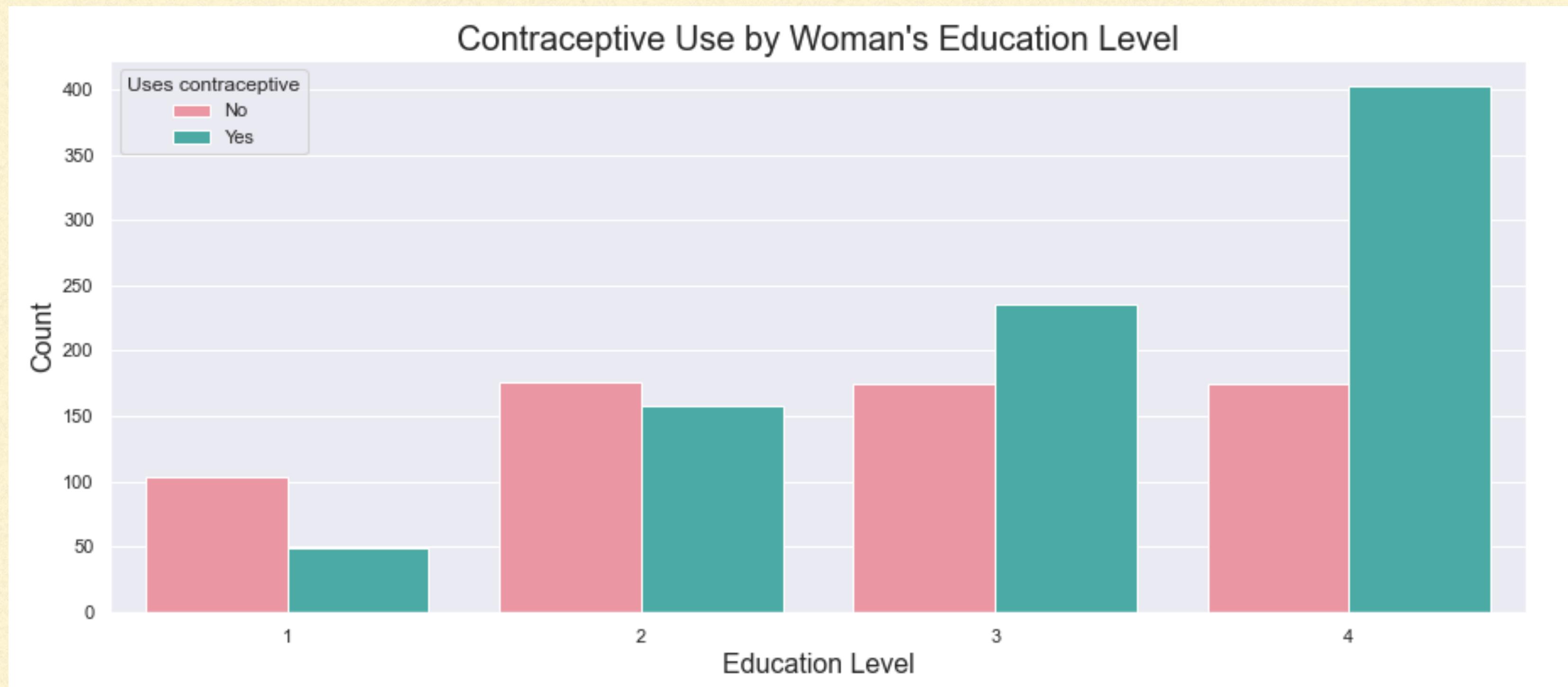
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# NUMBER OF CHILDREN

- The number of children has an effect on birth control use
- Of the 97 women with *no* children, **only 2** reported using any contraceptive method
- After having two children, # of women who use no contraception declines



# EDUCATION



1 = None

2 = Some  
Primary School

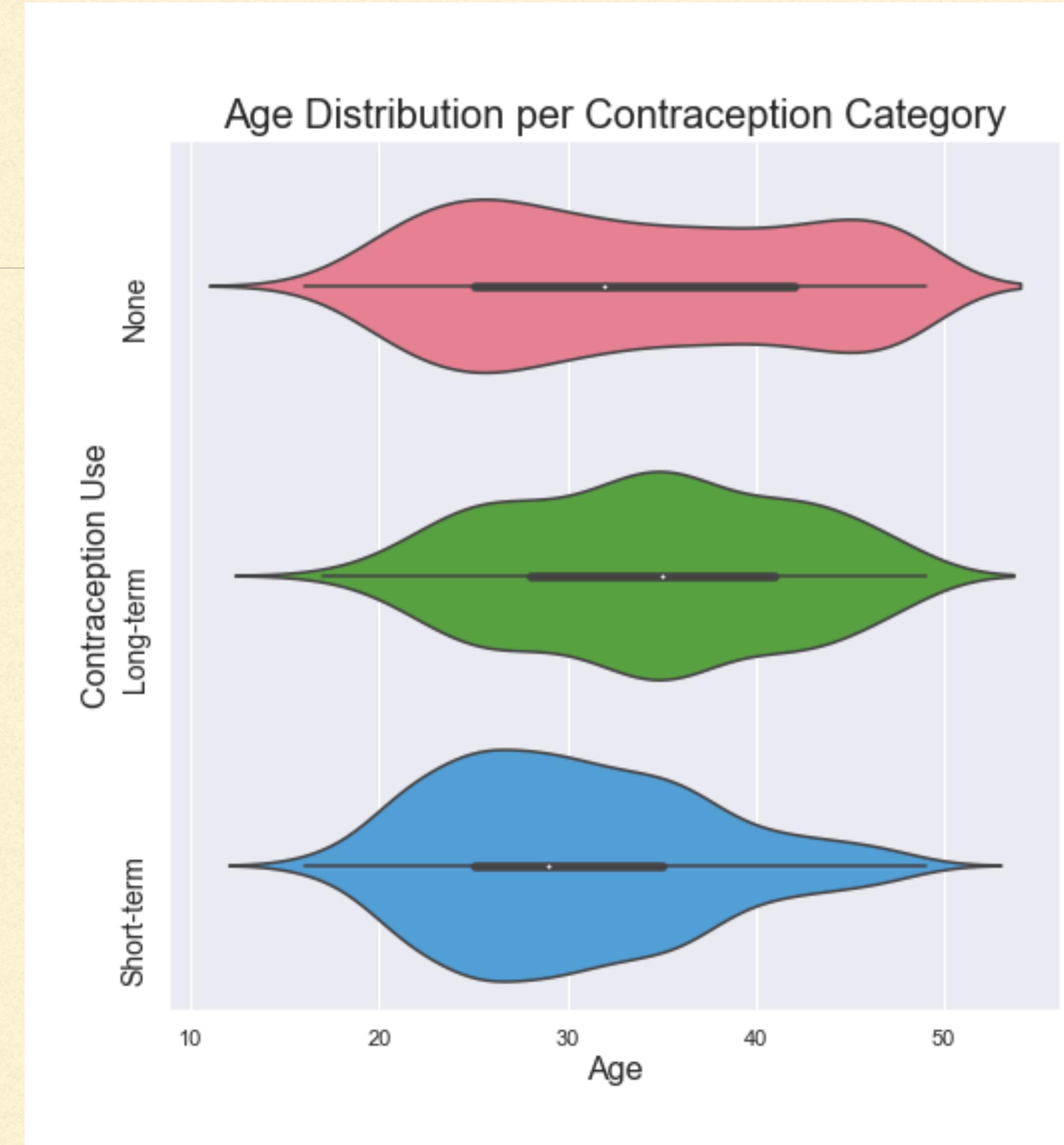
3 = Graduated  
Primary School

4 = Secondary or  
Higher Education

↑ ■ Education,  
↑ ■ Contraceptive use

# AGE

- No contraception:  
bimodal, aggregating around **25** and **46**.
- Long-term contraceptive methods:  
centers around **35**.
- Short-term contraceptive users:  
right-skewed,  
sharp increase to the mode at age **26**,  
steady, tapered decline with age.



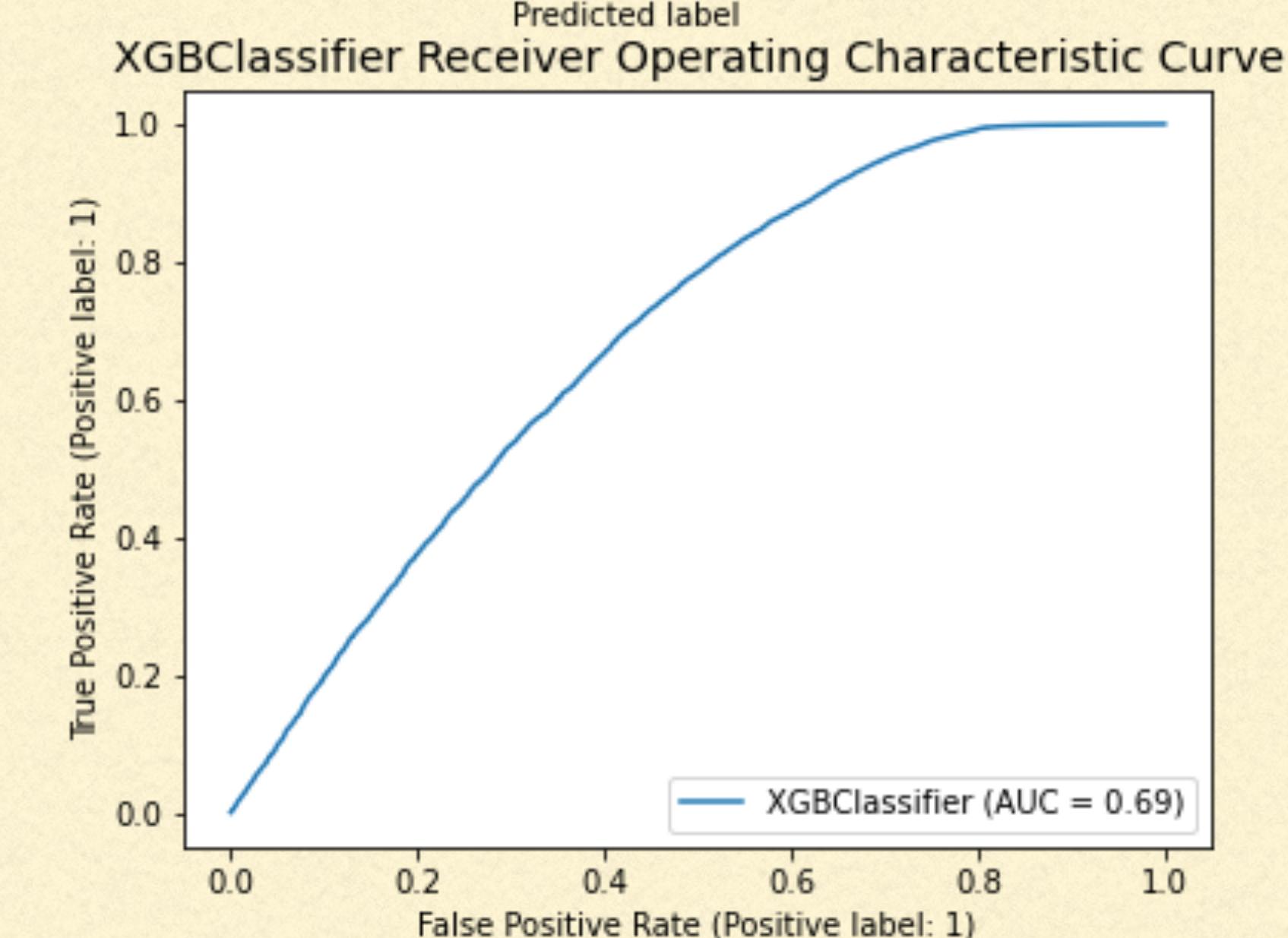
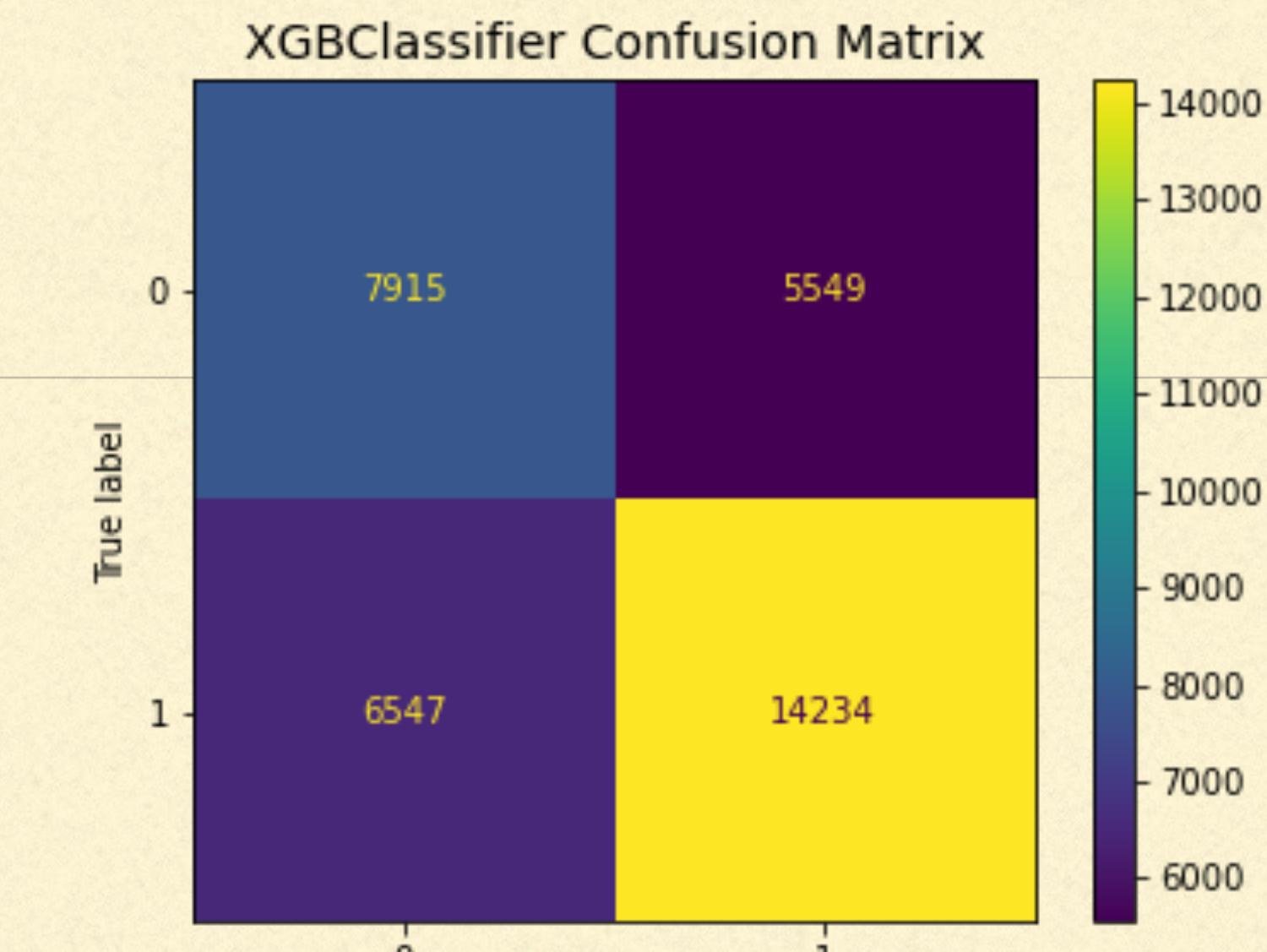
# MODELING

Best model XGBoost predicted values for contraception use in **1987**:

- Average recall: .75
- F1 score: .75
- AUC score: .79

Best model XGBoost predicted values for contraception use in **2017**:

- Average recall: .65
- F1 score: .65
- AUC score: .69



# CONCLUSION

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- After running model feature selection, it appears that age and number of children are a strong indicator for a woman's use of contraception
- The model also suggests that a woman's education is a strong indicator of the likelihood for her to select a long-term contraceptive method
- It would be beneficial to direct public health initiative around these factors

## FURTHER ACTION

- Optimize our model for recall
- Continue to clean, implement features from, and predict on data from subsequent years
- Evaluate against populations of other countries

# THANKYOU



Mike Flanagan

<https://www.linkedin.com/in/mike-flanagan-data/>

<https://github.com/mike-flanagan>



Alexander Xin

<https://www.linkedin.com/in/waximus/>

<https://github.com/eggrollofchaos/>

# ATTRIBUTION

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- The dataset referenced in this presentation is a subset from the 1987 National Indonesia Contraceptive Prevalence Survey

Creator: Tjen-Sien Lim ([limt@stat.wisc.edu](mailto:limt@stat.wisc.edu))

Donor: Tjen-Sien Lim ([limt@stat.wisc.edu](mailto:limt@stat.wisc.edu))

Date: June 7, 1997

Repository: <https://archive.ics.uci.edu/ml/datasets/Contraceptive+Method+Choice>

- Title card photo by Ruben Hutabarat on Unsplash  
Penglipuran Village, Bali, Indonesia  
<https://unsplash.com/photos/JsrcsvyUf88>
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