Effect of Literacy and Age at Marriage on Family Size in Portugal

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1 Introduction

This study aims to investigate how literacy and the age at marriage affect family size in Portugal using data from the 1979 fertility survey. Prior research has shown that literacy and socio-economic factors play a significant role in determining fertility rates. [Cite relevant literature here].
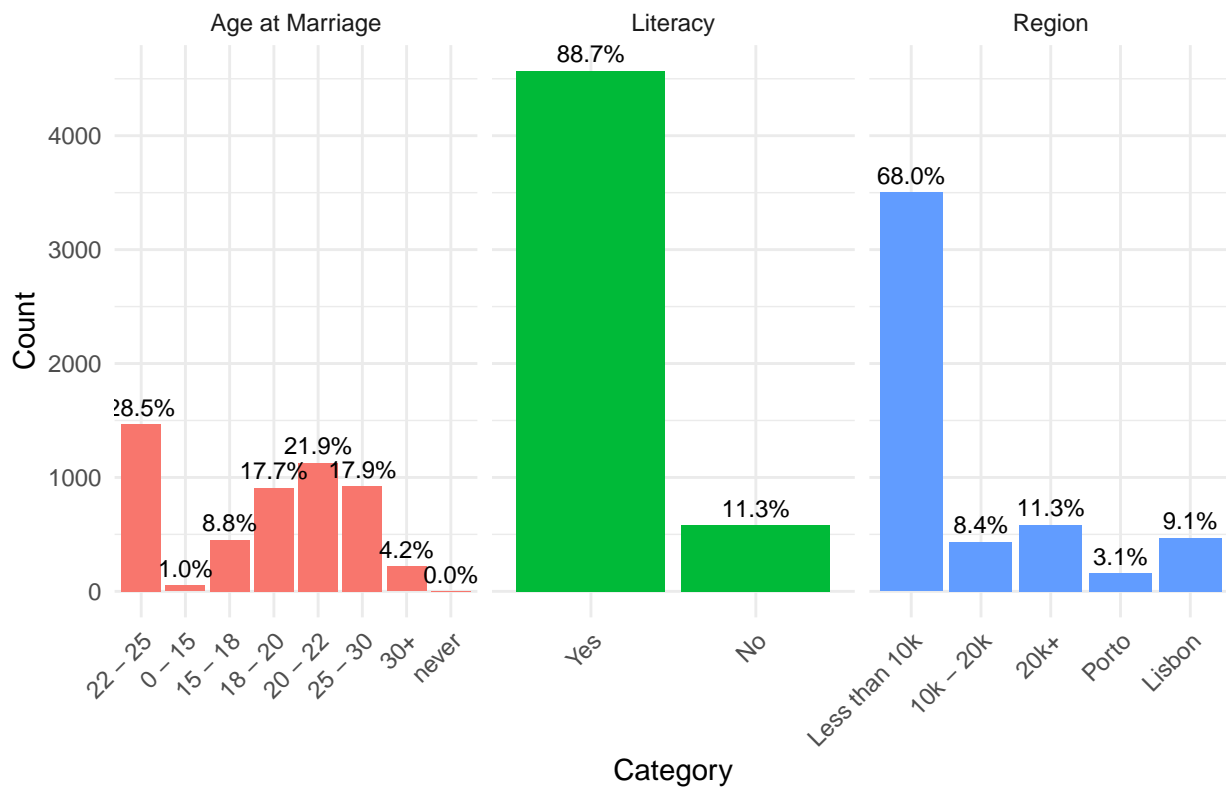
2 Method

We use a Generalized Linear Model (GLM) with a Poisson distribution to model the number of children per family, accounting for potential overdispersion using a quasi-Poisson or negative binomial approach.
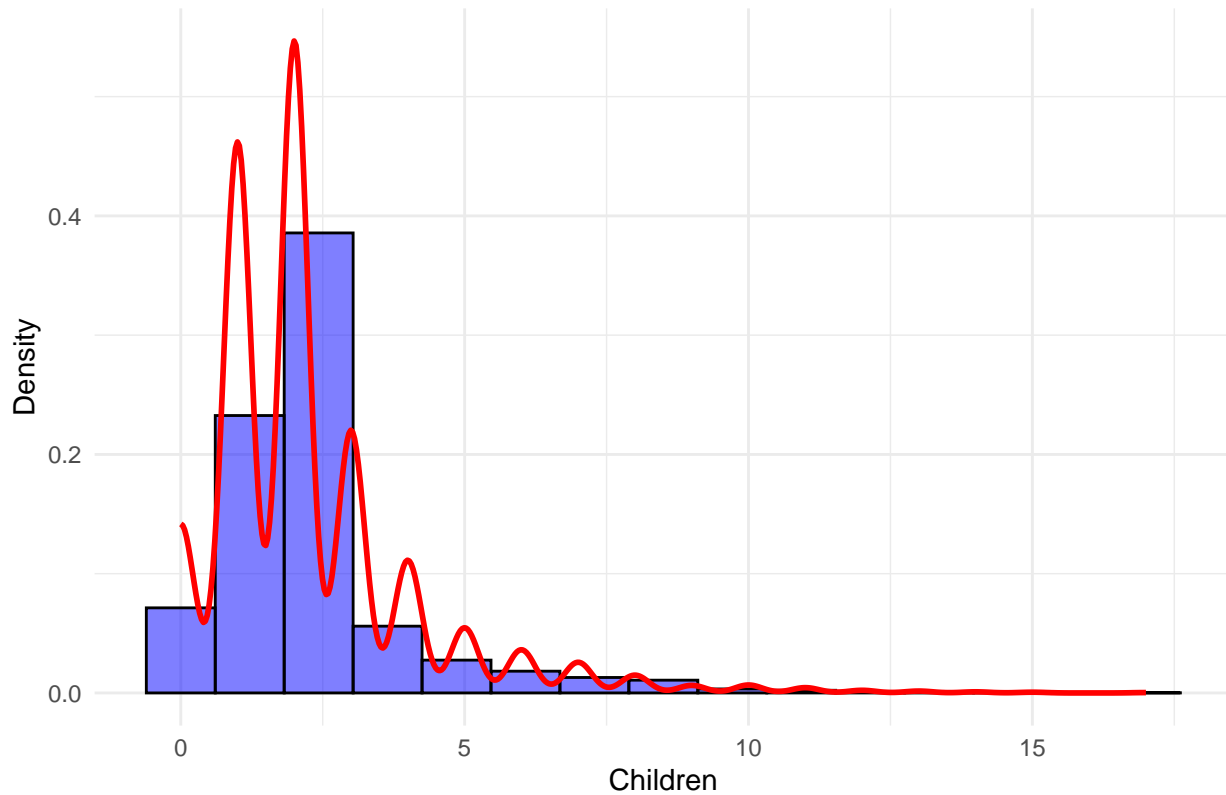
3 Result

3.1 Statistical Summary

Distribution of Categorical Variables

4 Exploratory Data Analysis for Poisson Assumption

Distribution of Number of Children


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## Mean of children: 2.26049
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## Variance of children: 3.463704
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5 Model Selection

Table 1: Model Coefficients from Poisson Regression with Offset

	Estimate	Std_Error	P_Value
(Intercept)	-4.379	0.022	0.000
literacyNo	0.129	0.024	0.000
ageMarried0 - 15	0.040	0.080	0.619
ageMarried15 - 18	0.075	0.034	0.027
ageMarried18 - 20	0.060	0.028	0.031
ageMarried20 - 22	0.024	0.026	0.367
ageMarried25 - 30	0.019	0.029	0.516
ageMarried30+	0.029	0.059	0.621
region.L	-0.154	0.031	0.000
region.Q	0.077	0.031	0.012
region.C	-0.131	0.041	0.001
region^4	-0.122	0.037	0.001

RR

1.2 1.1 1.0 0.9 0.8

literacyNo geMarried0 – 15 eMarried15 – 18 eMarried18 – 20 eMarried20 – 22 eMarried25 – 30 ageMarried30+ region.L region.Q region.C region^4
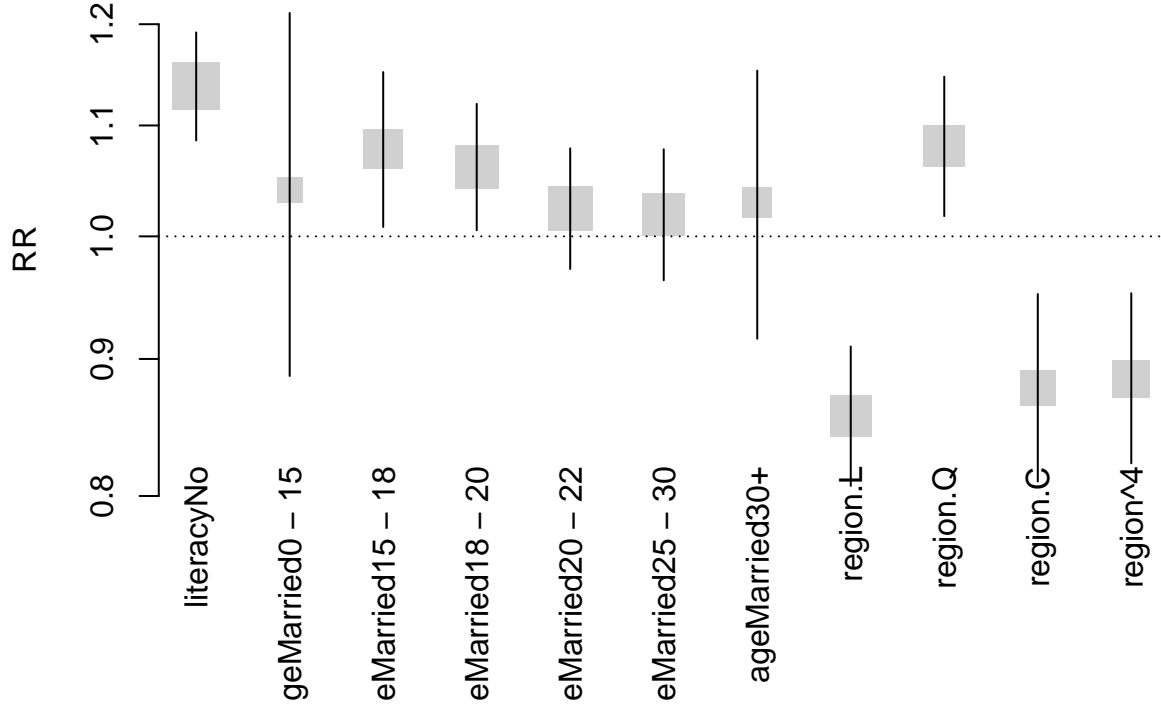
Table 2: Model Coefficients from Negative Binomial Regression
with Offset

	Estimate	2.5 %	97.5 %
(Intercept)	-4.363	-4.409	-4.316
literacyNo	0.119	0.067	0.171
ageMarried0 - 15	0.056	-0.118	0.230
ageMarried15 - 18	0.083	0.010	0.156
ageMarried18 - 20	0.065	0.006	0.125
ageMarried20 - 22	0.029	-0.027	0.086
ageMarried25 - 30	0.016	-0.045	0.077
ageMarried30+	0.028	-0.094	0.150
region.L	-0.154	-0.219	-0.090
region.Q	0.079	0.014	0.143
region.C	-0.128	-0.215	-0.041
region^4	-0.121	-0.200	-0.042
sd	0.245	0.214	0.279

6 Conclusion