

Tobacco

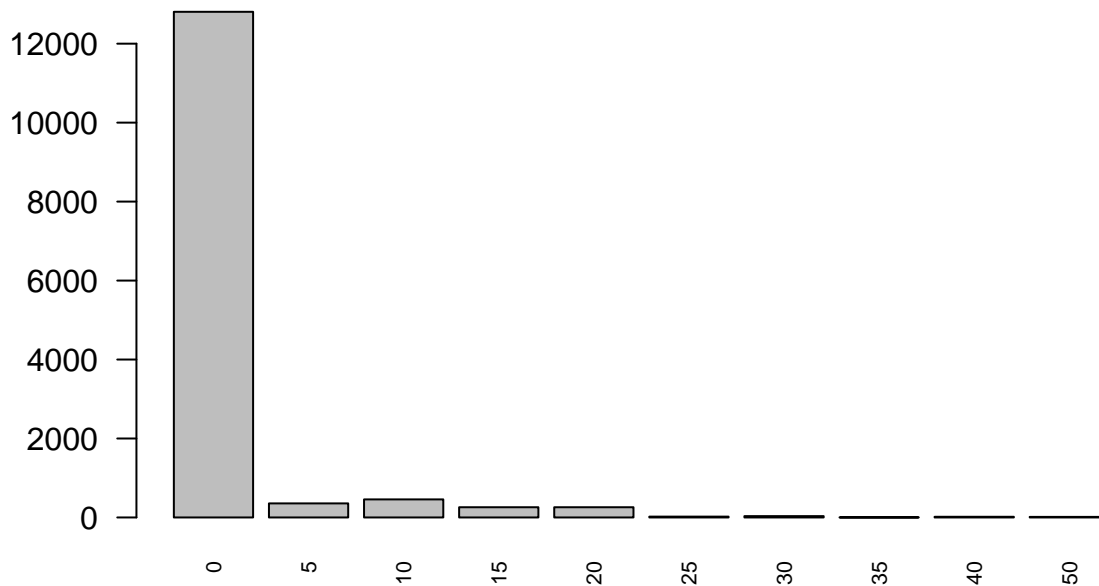
Tobacco

Number of cigarettes consumed is an indicator of several mental illnesses including anxiety (Lawrence et al. 2010).

Data

What variables are included? Why is this output chosen. What explanatory variables are used and why are they chosen

```
discrete_barplot(obs, "ncigs")
```



Methods

The number of zero inflated values is higher than expected for a count distribution such as a poisson distribution. This inflation occurs naturally as a large proportion (over 50%) of the population do not smoke. There are two sources of cigarette consumption that can be modelled using zero inflated models. In this case a zero-inflated poisson (ZIP) is used. Two models are fitted simultaneously. One is a logistic regression that estimates whether a person smokes cigarettes or not. This provides a simple probability of smoking or not. The second is a poisson counts model estimating the number of cigarettes consumed.

Data

Two set of variables are needed for the logistic and poisson parts of the ZIP model respectively.

Variables that predict how much a person smokes.

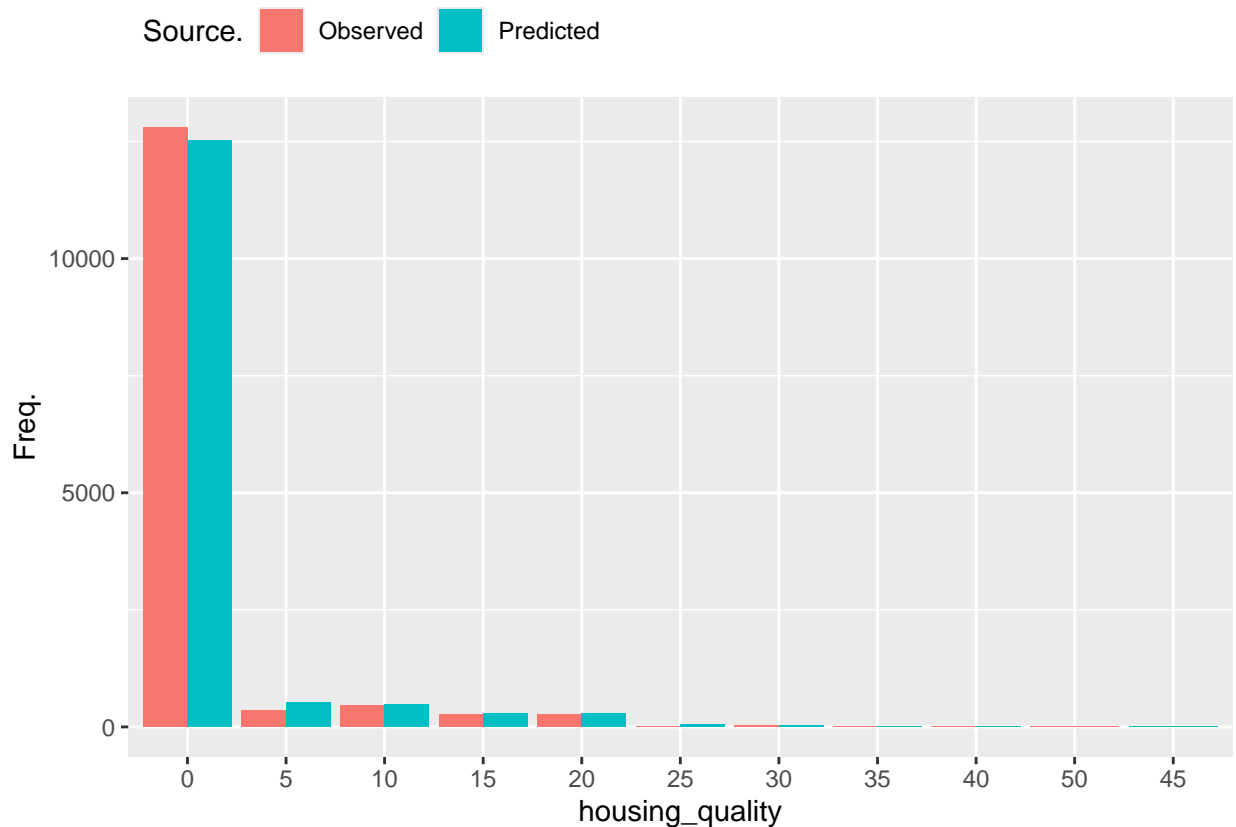
age. persons age. generally older people and very young smoke. SF_12. wellbeing estimates number of cigarettes smoked. labour_state. whether a person is employed or not. ethnicity. certain ethnicities more likely to smoke cigarettes. education_state. highest qualification. job_sec job quality hh_income household income ncigs previous number consumed.

Variables that predict whether a person smokes

ethnicity. certain ethnicities more likely to smoke cigarettes. labour_state. whether a person is employed or not. age SF_12. wellbeing estimates number of cigarettes smoked. ncigs previous number consumed.

Results

Almost all coefficients significant. Particularly previous consumption of cigarettes. Good estimation of the number of non-smokers in the population at around 55%. Counts of smoking are underdispersed and fail to estimate consumption over 20 cigarettes.



```
##                               Length Class      Mode
## predictions                   591620 -none-    numeric
## num.trees                      1 -none-    numeric
## num.independent.variables      1 -none-    numeric
## mtry                           1 -none-    numeric
## min.node.size                  1 -none-    numeric
## prediction.error               1 -none-    numeric
```

## forest	10	ranger.forest	list
## splitrule	1	-none-	character
## treetype	1	-none-	character
## call	6	-none-	call
## importance.mode	1	-none-	character
## num.samples	1	-none-	numeric
## replace	1	-none-	logical
## dependent.variable.name	1	-none-	character

References

Lawrence, David, Julie Considine, Francis Mitrou, and Stephen R Zubrick. 2010. "Anxiety Disorders and Cigarette Smoking: Results from the Australian Survey of Mental Health and Wellbeing." *Australian & New Zealand Journal of Psychiatry* 44 (6): 520–27.