WSP_modelling

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Quantitative analysis/modelling

Quantitative data analysis: Descriptive and statistical - to understand variation in respondent's awareness, knowledge and attitudes towards white storks and their reintroduction.

Methods plan

- GLM approach + model selection and averaging
    - Anderson, D. and Burnham, K., 2004. Model selection and multi-model inference. Second. NY: Springer-Verlag, 63(2020), p.10.
    - Burnham, K.P., Anderson, D.R. and Huyvaert, K.P., 2011. AIC model selection and multimodel inference in behavioral ecology: some background, observations, and comparisons. Behavioral ecology and sociobiology, 65(1), pp.23-35.
- PCA/Clustering?

Exploring the response variable

Response variable = Attitudes to WS reintroduction (Composite score)

```
str(final_data$OverallAttitudeScore) # check it's a numeric column
```

```
##  num [1:3531] NA NA NA 4.93 4.64 4.86 4.57 4.86 3.29 3.93 ...
```

```
final_data %>%
    group_by(SurveyType) %>%
    summarise(sum(!is.na(OverallAttitudeScore))) ## Couting NON-NA values per survey type
```

```
## # A tibble: 2 x 2
##   SurveyType `sum(!is.na(OverallAttitudeScore))`
##   <fct>                                    <int>
## 1 NatRep                                     743
## 2 Proactive                                 1749
```

Possible predictor variables

Factor variables

- Age (collapse further?)
- Gender (female / male)
- Urban / suburban / rural
- Highest education (collapse – e.g. degree; below degree)
- Occupation (use? If so, would need to collapse! unemployed; retired; potentially pool responses except for those who answered "environment, nature & wildlife")
- Visited Knepp (yes / no)
- Time spent in nature
- Member of conservation/environmental organisation (quite a few people listed RSPB)
- Awareness
- Heard of white stork before taking this survey?
- Heard of white stork project / reintroduction effort?

Numeric variables

- Contact and connection with nature; general environmental attitudes and behaviour
- Nature Connection Index (composite score)
- Environmental concern (composite score)
- General attitude towards birds (composite score)

```r
# Select all possible predictor vars
model_data <- final_data %>%
  select(UniqueID_all, OverallAttitudeScore, SiteProximity, SurveyType,
         Age_short, Gender, Area_type, Education_short, Occupation_short,
         Q27_Knepp_visit, Q18_exp_nature, Q1_aware_stork, Q9_heard, KnowledgeScore,
         Q22....Are.you.a.member.of.any.environmental..wildlife.or.conservation.organisations.,
         NCI, ProCoBS, BirdInterestScore, EnvConcern.score)

# Select numeric variables
model_numeric <- model_data %>%
  dplyr::select_if(., is.numeric) %>%
  dplyr::select(., -UniqueID_all) %>%
  drop_na()
nrow(model_numeric)
```

```
## [1] 2483
```

```r
# Create corrlation matrix
model.cor = cor(model_numeric, method = c("spearman"))
res1 <- cor.mtest(model_numeric, conf.level = .95)
corrplot::corrplot(model.cor, p.mat = res1$p, method = "circle", type = "lower", insig='blank',
        addCoef.col ='black', order = "AOE", diag=FALSE)
```
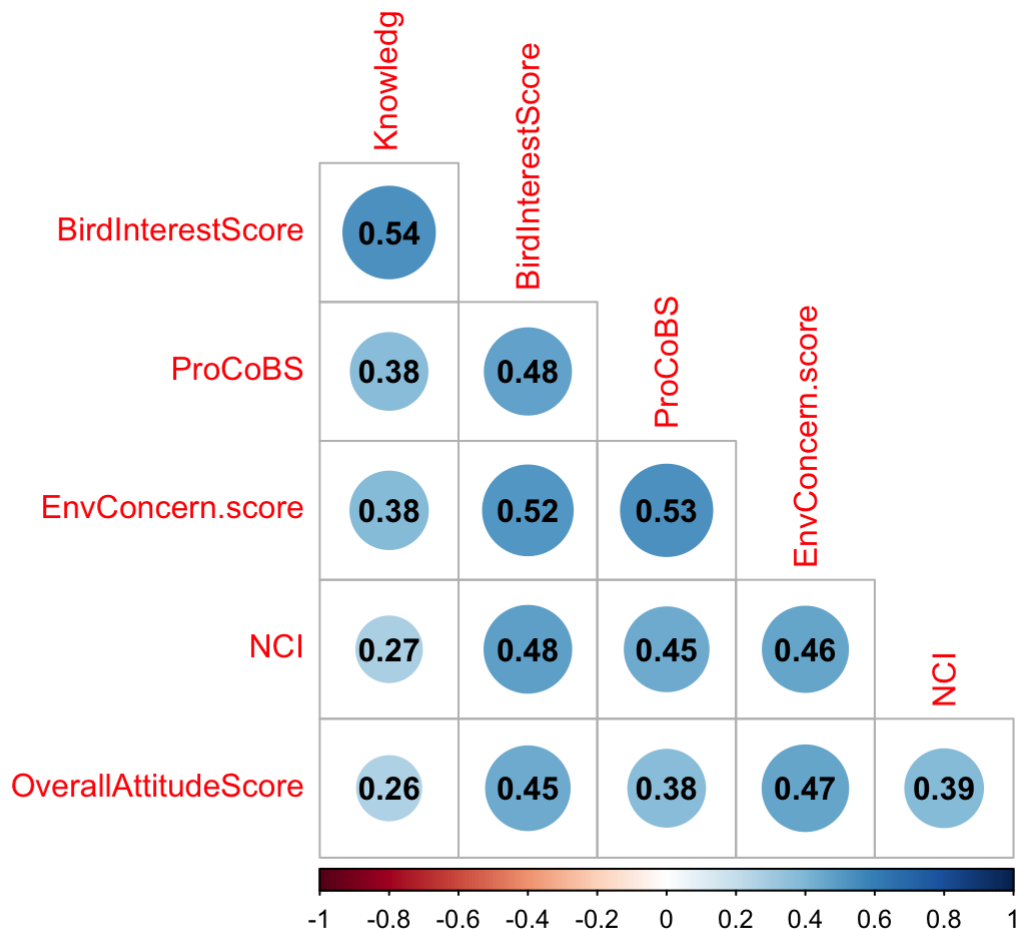


```
### All variables moderately correlated but non significant
```