# SNS Survey Analysis Notes

## Contents


**Factor analysis (FA) Q8** **1**

**FA Q10** **1**

**Analysis of Q19** **3**

**FA Q20** **5**

**Predictive models** **7**
Q8 and Q7 . . . . . 7
Q10 and Q19 . . . . . 7
Q10 and Q20 . . . . . 8

**Further** **9**


## Factor analysis (FA) Q8

3, 4 and 5 factors are acceptable. Shown are only 3 and 4 factors, as 5 appear too many for 9 variables.

- Factor1 (Games): playgamesfriends, plagamesstranger, playgamesalone
- Factor2 (Spare time): killtime, browsenoreason, beentertained

Downloadmusic appears to be unrelated to the above identified latent variables.

## FA Q10

Minimum 3 factors required. 4 factors are too many.

Figure 1: FA loadings

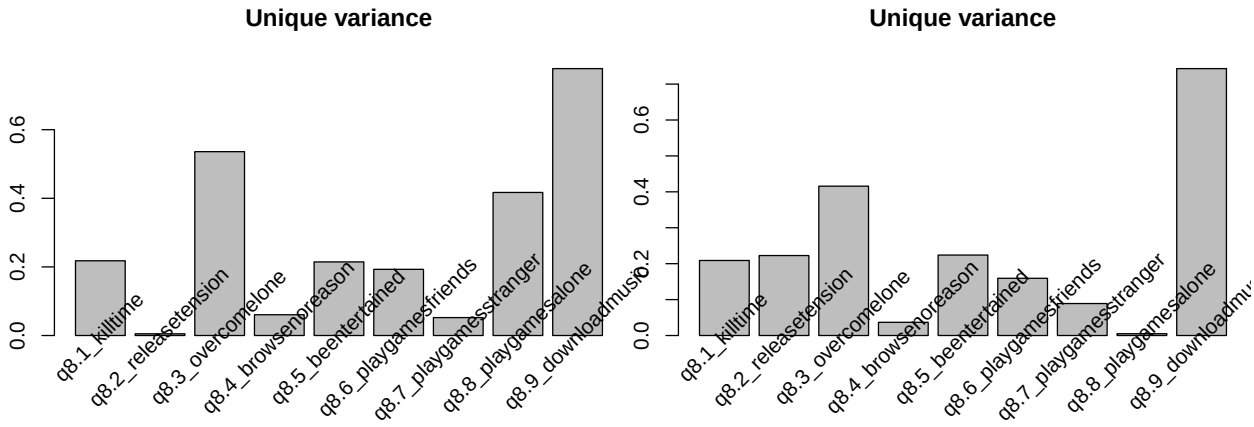



Figure 2: FA unique variance

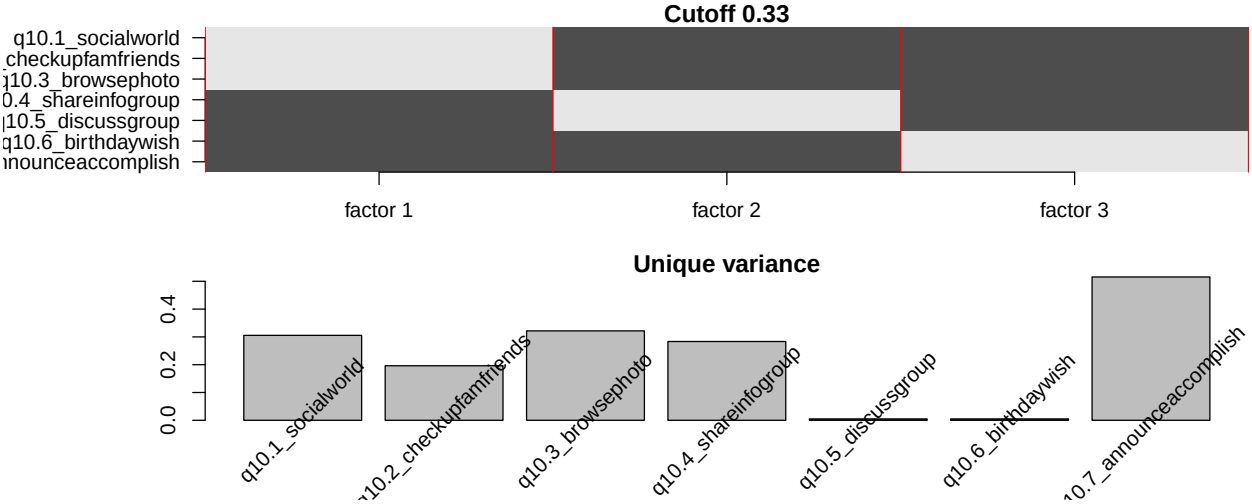



Figure 3: FA loadings and unique variance

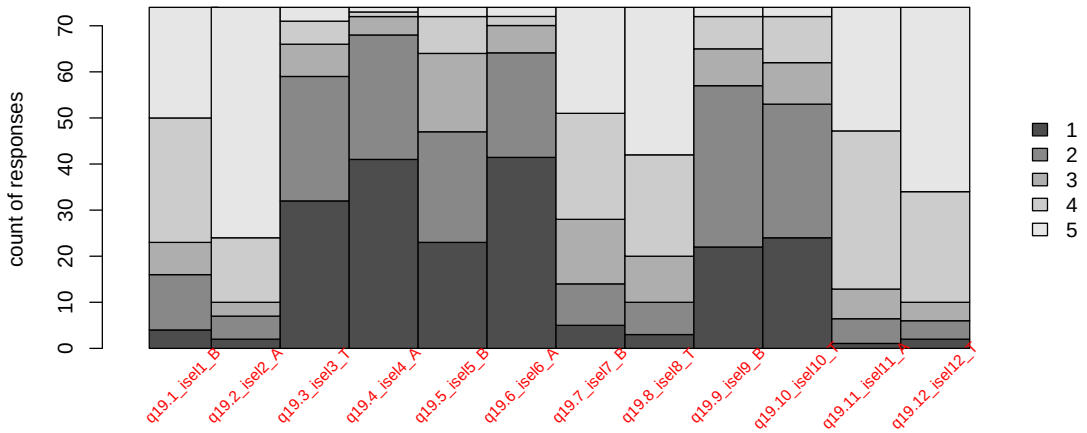



Figure 4: Counts

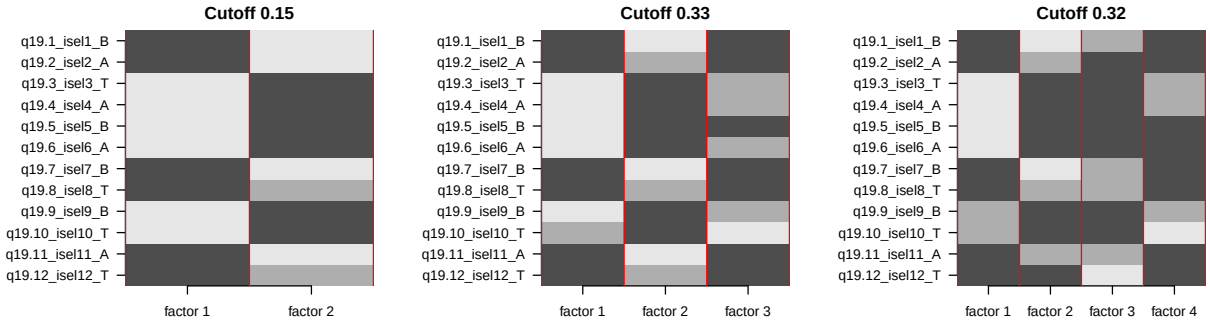
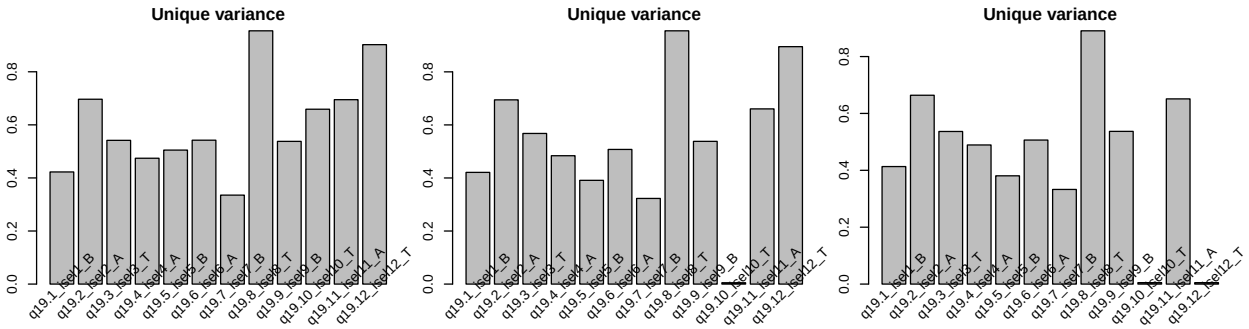



Figure 5: FA loadings

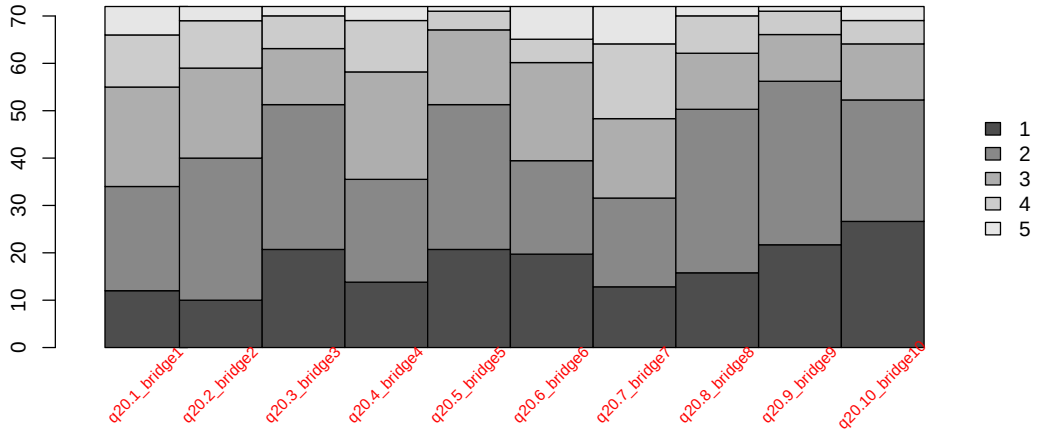
# Analysis of Q19

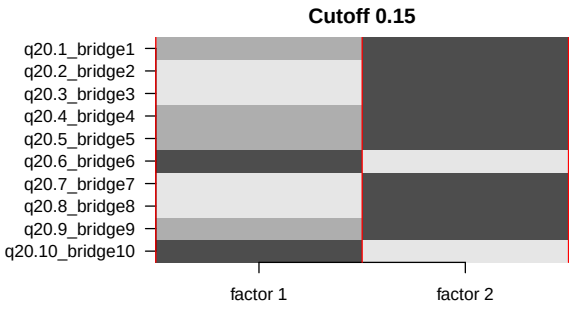
Acceptable factors are 2 to 7. Regardless of the number of factors the isel questions' subscales (Tangible, Appraisal, Belonging and Self-esteem) do not appear to be constructing independent latent variables.

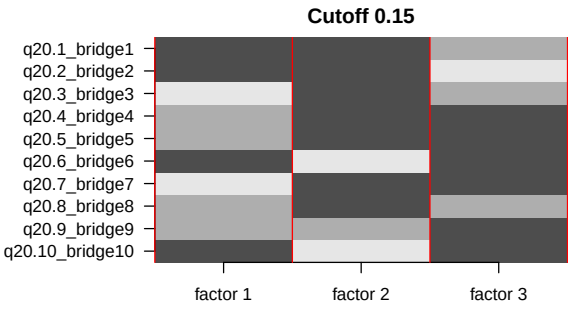

Unique variance
Unique variance
Unique variance

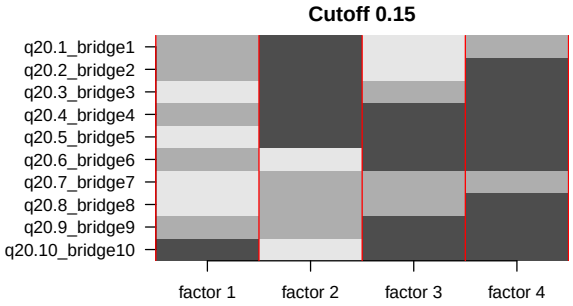
# FA Q20

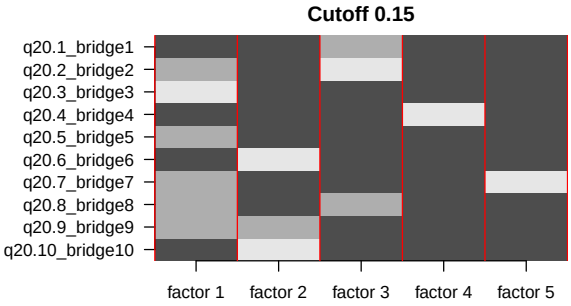
2 or 3 factors

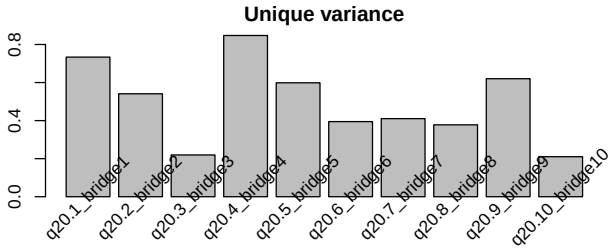


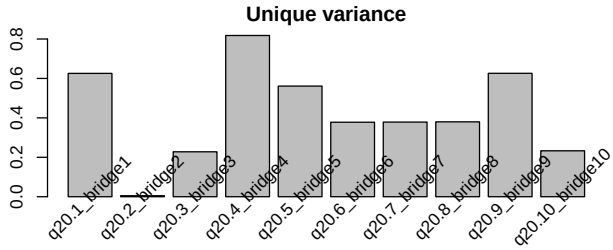




Unique variance
0.0
0.4
0.8
q20.1_bridge1
q20.2_bridge2
q20.3_bridge3
q20.4_bridge4
q20.5_bridge5
q20.6_bridge6
q20.7_bridge7
q20.8_bridge8
q20.9_bridge9
q20.10_bridge10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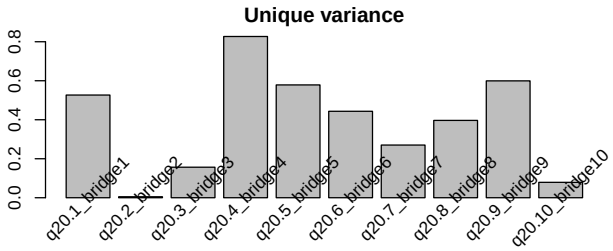
q20.1_bridge1
q20.2_bridge2
q20.3_bridge3
q20.4_bridge4
q20.5_bridge5
q20.6_bridge6
q20.7_bridge7
q20.8_bridge8
q20.9_bridge9
q20.10_bridge10


Unique variance
0.0
0.2
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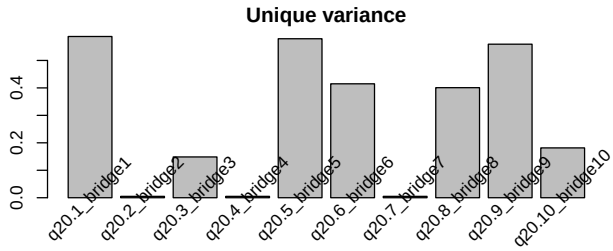
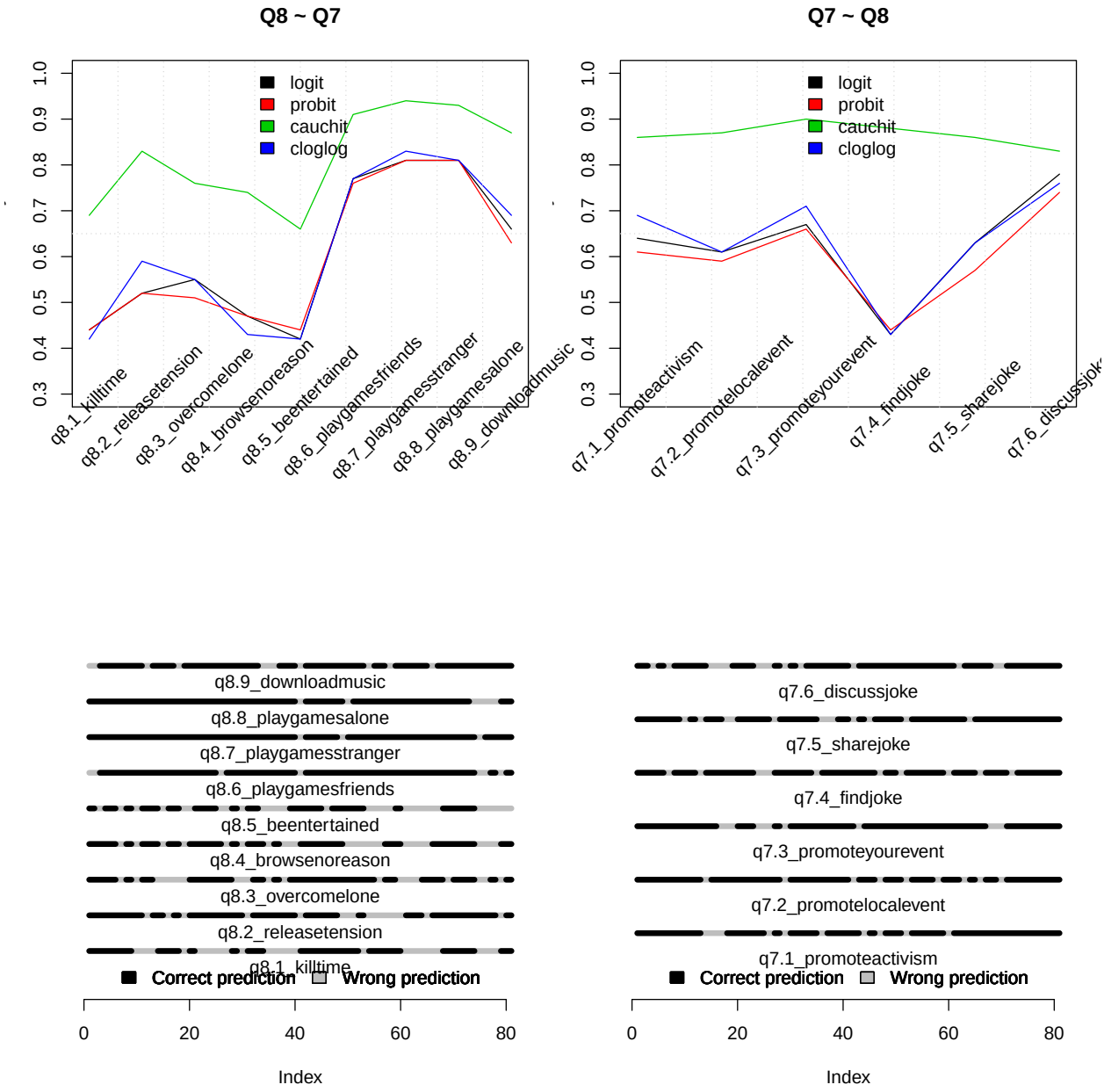
0.6
0.8
q20.1_bridge1
q20.2_bridge2
q20.3_bridge3
q20.4_bridge4
q20.5_bridge5
q20.6_bridge6
q20.7_bridge7
q20.8_bridge8
q20.9_bridge9
q20.10_bridge10


Unique variance
0.0
0.2
0.4
q20.1_bridge1
q20.2_bridge2
q20.3_bridge3
q20.4_bridge4
q20.5_bridge5
q20.6_bridge6
q20.7_bridge7
q20.8_bridge8
q20.9_bridge9
q20.10_bridge10

# Predictive models

## Q8 and Q7

The first two plots show the prediction accuracy followed by the actual prediction (true/false).

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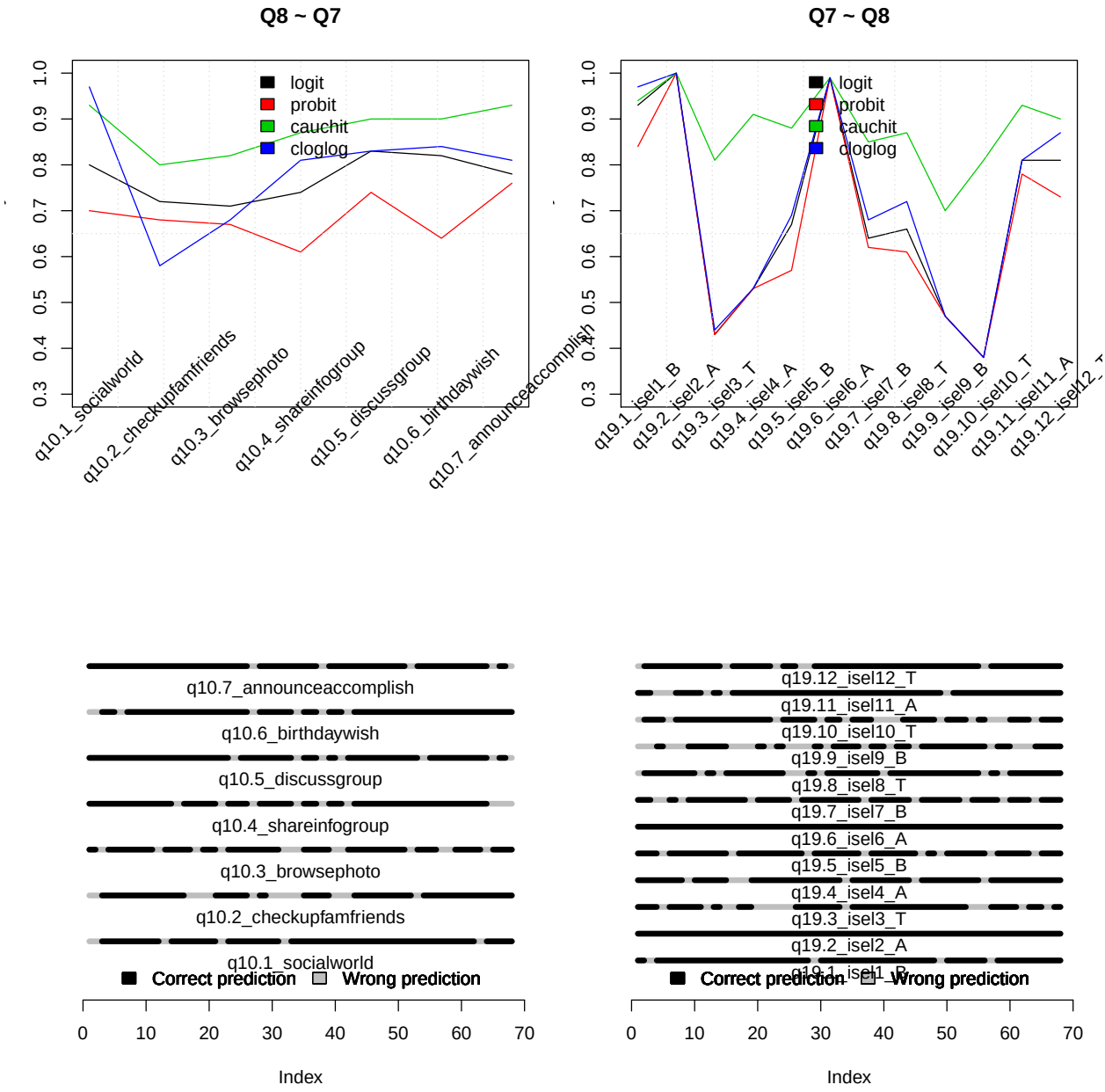
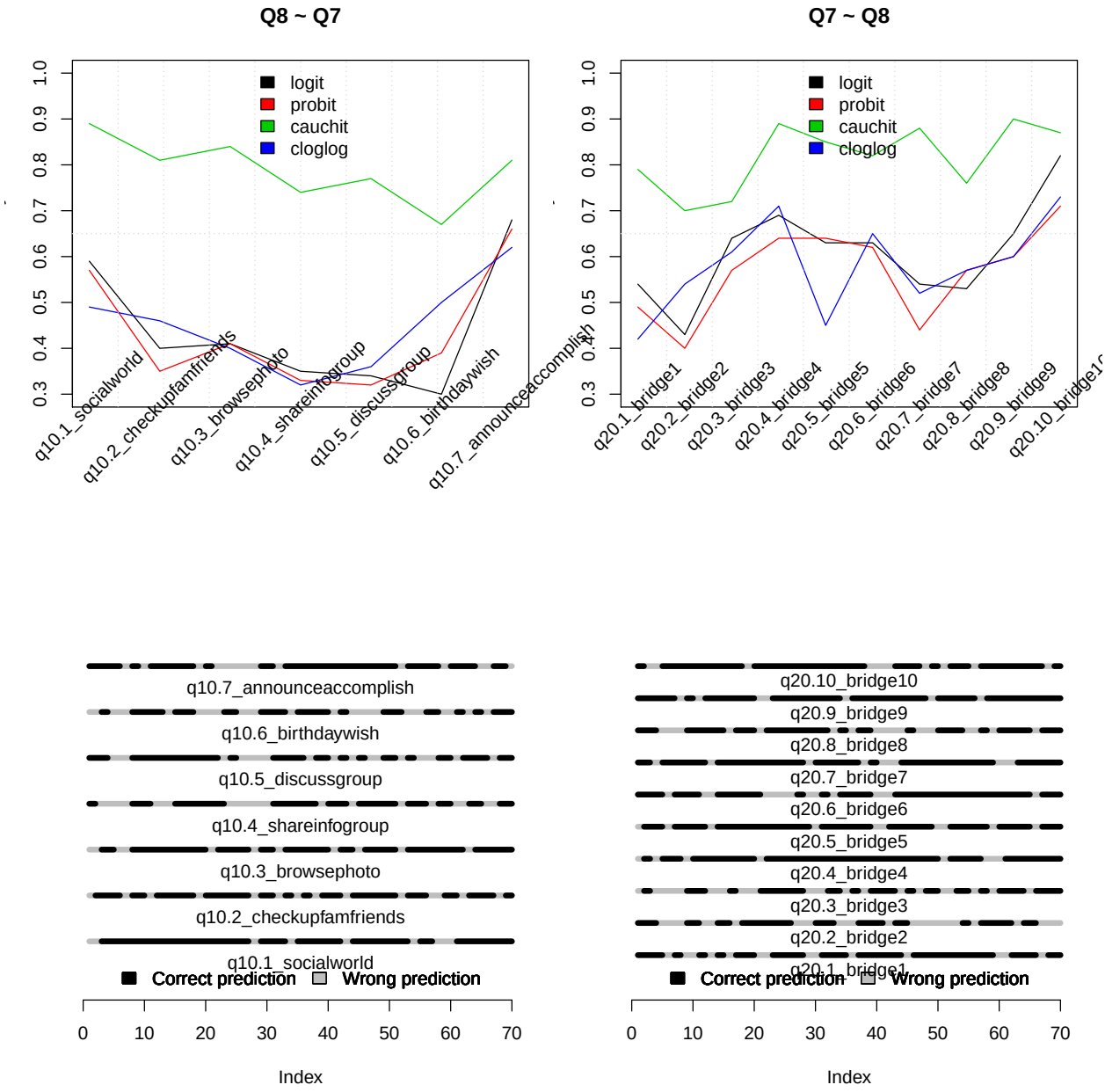
## Q10 and Q19

The first two plots show the prediction accuracy followed by the actual prediction (true/false).




## Q10 and Q20

The first two plots show the prediction accuracy followed by the actual prediction (true/false).




# Further

- Factor analysis can be extended to include other questions and subquestions
- Particular hypthesis could be tested using CFA
- Alternative predictive models for latent variables can be constructed, potentially for mixtures of questions
- Cauchit link binomial GLMs appear to be fitting best. Alternatively, one could investigate negative binomial GLMs