Package: Romney (via r-universe)

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Type Package

Title Classical Cultural Consensus Analysis

Version 0.1.0

Description Implements classical cultural consensus analysis with formal, informal, and covariance agreement models, 'UCINET'-aligned minimum-residual factor extraction, competence estimation, and answer-key estimation. Based on the classical framework of Romney, Weller, and Batchelder (1986) <doi:10.1525/aa.1986.88.2.02a00020>, Romney, Batchelder, and Weller (1987) <doi:10.1177/000276487031002003>, and Weller (2007) <doi:10.1177/1525822X07303502>.

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Imports psych, stats

Suggests testthat (>= 3.0.0)

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URL https://github.com/wernerhertzog/Romney

BugReports https://github.com/wernerhertzog/Romney/issues

Repository https://wernerhertzog.r-universe.dev

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Contents

`agreement_models` *Agreement Matrices for Consensus Analysis*

Description

Compute respondent-by-respondent agreement matrices for the formal, informal, and covariance consensus models.

Usage

```
agreement_formal(data, n_answers = NULL)

agreement_informal(data)

agreement_covariance(data, prior = 0.5)
```

Arguments

`data`	A respondent-by-item matrix or data frame.
`n_answers`	Number of possible answers for the formal model.
`prior`	Prior proportion of true items for the covariance model.

Value

A square agreement matrix.

`answerkey_formal` *Estimate a Formal Consensus Answer Key*

Description

Estimate the most likely answer key under the formal consensus model.

Usage

```
answerkey_formal(data, competence, prior = NULL, answer_levels = NULL)
```

Arguments

data	A respondent-by-item matrix or data frame.
competence	Numeric competence scores, one per respondent.
prior	Optional prior distribution over answer levels.
answer_levels	Optional ordered vector of allowable answer levels.

Value

A list with key, probabilities, and levels.

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consensus *Run a Cultural Consensus Analysis*

Description

Run a cultural consensus analysis using UCINET-aligned minimum-residual factor extraction for the consensus eigensystem.

Usage

```
consensus(
  data,
  cultures = 1,
  method = c("formal", "informal", "covariance"),
  prior = 0.5,
  return_answer_key = TRUE
)
```

Arguments

data	A respondent-by-item matrix or data frame.
cultures	Number of latent cultures to extract.
method	One of "formal", "informal", or "covariance".
prior	Prior proportion of true items for the covariance model.
return_answer_key	Whether to estimate the answer key for the formal model.

Value

An object of class romney_consensus.

`simulate_consensus_data` *Simulate Formal Consensus Data*

Description

Simulate respondent-by-item response data for the formal consensus model.

Usage

```
simulate_consensus_data(
  n_respondents,
  n_questions,
  n_answers = 2,
  competence = 0.7,
  seed = NULL
)
```

Arguments

`n_respondents`	Number of respondents.
`n_questions`	Number of questions/items.
`n_answers`	Number of possible answers per item.
`competence`	Scalar or vector of respondent competences.
`seed`	Optional random seed.

Value

A list with `responses`, `key`, and `competence`.

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