

Package ‘multicon’

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Type Package

Title Multivariate Constructs

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Description Includes functions designed to examine relationships among multivariate constructs (e.g., personality). This includes functions for profile (within-person) analysis, dealing with large numbers of analyses, lens model analyses, and structural summary methods for data with circumplex structure. The package also includes functions for graphically comparing and displaying group means.

License GPL-2

Depends R (>= 3.0.0), psych, abind, foreach

Imports mvtnorm, sciplot,

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multicon-package	<i>Multivariate Constructs</i>
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Description

This package contains functions for examining multivariate constructs (MCs).

Details

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 Type: Package
 Version: 1.6
 Date: 2011-1-29
 License: GPL-2

MCs are, as the name implies, constructs that consist of many variables. For example, personality is not a single variable, but a constellation of many individual variables. This is problematic for traditional analyses which only examine the relationships between only 1 variable (or just a few variables) and some outcome of interest. Within-person analyses are often interested in MCs as well. This package contains functions for examining such multivariate constructs.

Author(s)

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References

Cumming, G. (2012). *Understanding the New Statistics: Effect Sizes, Confidence Intervals, and Meta-Analysis*. New York: Routledge.

Funder, D. C., Furr, R. M., Colvin, C. R. (2000). The Riverside Behavioral Q-sort: A tool for the description of social behavior. *Journal of Personality*, 68, 451-489.

Furr, R. M., Wagerman, S. A., & Funder, D. C. (2010). Personality as manifest in behavior: Direct behavioral observation using the revised Riverside Behavioral Q-sort (RBQ-3.0). In C.R. Agnew, D. E. Carlston, W. G., Graziano, & J. R. Kelly (Eds.), *Then a miracle occurs: Focusing on behavior in social psychological theory and research*. (pp. 186-204). Oxford University Press.

Furr, R. M. (2008). A framework for Profile similarity: Integrating similarity, normativeness, and distinctiveness. *Journal of Personality*, 76(5), 1267-1316.

My website: <http://psy2.fau.edu/~shermanr/index.html>

See Also

[psych](#)

Examples

```
# Some examples of the core functions in the multicon package:

# Is personality related to behavior? This simple question becomes more
# complex with the recognition that both personality and behavior are multivariate constructs.
# One (of many) ways to quantify personality is with a a 100-item measure,
# the California Adult Q-set (CAQ: Block, 1961). And one (of a few) ways to
# quantify behavior is with a 67-item measure, the Riverside Behavioral Q-sort
# (RBQ: Funder, Furr, & Colvin, Colvin, 2000; Furr, Wagerman, & Funder, 2010).

# How well are these two instruments related? There are 100 * 67 = 6700
# possible correlations that could be examined one at a time. Alternatively,
# we could answer our question more directly by simply seeing what the
# (absolute) average correlation is amongst these two sets of items and testing
# it against a baseline model that assumes zero association. The function
# rand.test() does this.

data(caq)
data(v2rbq)
# Note that in practice more sims (i.e., 1000 or more) might be preferred
rand.test(caq, v2rbq, sims=100, graph=FALSE)

# How is a specific single variable of interest (e.g., Extraversion) related
# to some multivariate construct (e.g., behavior - as measured by the RBQ)?
# Do the relationships differ by sex? The function q.cor() is
# designed to answer this question.
```

```

data(RSPdata)
  # Note that in practice more sims (i.e., 1000 or more) might be preferred
myobj <- q.cor(RSPdata$sEXT, v2rbq, sex = RSPdata$ssex, fem = 1, male = 2, sims=100)
myobj
  # The results can be organized by using q.cor.print() for easier interpretation
data(rbv3.items)
q.cor.print(myobj, rbqv3.items, "RBQ", short=TRUE)

# How well do two judgments of a target's personality agree with each other?
# Again, assuming personality is measured as a multivariate construct
# (e.g., the 100-item CAQ), this question is not so straightforward. One way
# is to correlate the two judge's ratings across the 100-item pairs (profile correlation).
# This can be done for each target with two judges. The function Profile.r() does this.

data(acq1) # The first friend of a target being judged (N targets = 205)
data(acq2) # The second friend of a target being judged

Profile.r(acq1, acq2) # The agreements (correlations) for each target
  # Get summary statistics for the agreements
describe.r(Profile.r(acq1, acq2))
  # If we want to control for normativeness (see Furr, 2008) and get
  # significance tests (for both overall and distinctive agreement) we
  # can simply set distinct=TRUE.
Profile.r(acq1, acq2, distinct=TRUE)
  # If we want to know how replicable (reliable) the agreement correaltions are
  # we can use Profile.r.rep()
Profile.r.rep(acq1, acq2)

# The package also includes some graphing functions for comparing group means
# based on "The New Statistics" (Cumming, 2012).
y <- c(rnorm(30), rnorm(30, mean=1))
group <- rep(1:2, each=30)
catseye(y, group, las=1, main="A Catseye Plot", xlab="",
  grp.names=c("Control", "Experimental"), ylab="DV")
catseye(y, group, las=1, main="A Catseye Plot #2", xlab="",
  grp.names=c("Control", "Experimental"), ylab="DV", conf=.80, col="cyan")
df=data.frame(group=group,y=y)
diffPlot(y ~ group,data=df,grp.names=c("Control", "Experimental"), xlab="",
  ylab="DV", main="A Difference Plot", sub="Arms are 95 percent CIs")

```

acq.comp

Acquaintance CAQ Composite

Description

This is the composite of two aquaintace CAQ ratings of a participant's personality from the Riverside Situation Project

Usage

```
data(acq.comp)
```

Format

A data frame with 205 observations on the following 100 variables.

acqCompCAQ001 Critical, skeptical, not easily impressed
 acqCompCAQ002 A genuinely dependable and responsible person
 acqCompCAQ003 Has a wide range of interests
 acqCompCAQ004 Talkative
 acqCompCAQ005 Behaves in a giving way toward others
 acqCompCAQ006 Fastidious, perfectionistic
 acqCompCAQ007 Favors conservative values
 acqCompCAQ008 Appears to have a high degree of intellectual capacity
 acqCompCAQ009 Uncomfortable with uncertainty and complexity
 acqCompCAQ010 Anxiety and tension find outlet in bodily symptoms
 acqCompCAQ011 Protective of those close to him or her
 acqCompCAQ012 Tends to be self-defensive
 acqCompCAQ013 Thin-skinned; sensitive to criticism or interpersonal slight
 acqCompCAQ014 Genuinely submissive; accepts domination comfortably
 acqCompCAQ015 Skilled in social techniques of imaginative play, pretending, and humor
 acqCompCAQ016 Introspective and concerned with self as an object
 acqCompCAQ017 Sympathetic and considerate
 acqCompCAQ018 Initiates humor
 acqCompCAQ019 Seeks reassurance from others
 acqCompCAQ020 Has a rapid personal tempo; behaves and acts quickly
 acqCompCAQ021 Arouses nurturant feelings in others
 acqCompCAQ022 Feels a lack of personal meaning in life
 acqCompCAQ023 Extrapunitive; tends to transfer or project blame
 acqCompCAQ024 Prides self on being objective,rational
 acqCompCAQ025 Tends toward over-control of needs and impulses
 acqCompCAQ026 Productive; gets things done
 acqCompCAQ027 Shows condescending behavior in relations with others
 acqCompCAQ028 Tends to arouse liking and acceptance
 acqCompCAQ029 Turned to for advice and reassurance
 acqCompCAQ030 Gives up and withdraws where possible in the face of frustration and adversity
 acqCompCAQ031 Regards self as physically attractive
 acqCompCAQ032 Aware of the impression made on others
 acqCompCAQ033 Calm, relaxed in manner
 acqCompCAQ034 Over-reactive to minor frustrations, irritable
 acqCompCAQ035 Has warmth; has the capacity for close relationships; compassionate

- acqCompCAQ036 Subtly negativistic; tends to undermine and obstruct
- acqCompCAQ037 Guileful and deceitful, manipulative, opportunistic
- acqCompCAQ038 Has hostility toward others
- acqCompCAQ039 Thinks and associates ideas in unusual ways; has unconventional thought processes
- acqCompCAQ040 Vulnerable to real or fancied threat, generally fearful
- acqCompCAQ041 Moralistic
- acqCompCAQ042 Reluctant to commit to any definite course of action; tends to delay or avoid action
- acqCompCAQ043 Facially and/or gesturally expressive
- acqCompCAQ044 Evaluates the motivation of others in interpreting situations
- acqCompCAQ045 Has a brittle ego-defense system; does not cope well under stress or strain
- acqCompCAQ046 Engages in personal fantasy and daydreams
- acqCompCAQ047 Has a readiness to feel guilt
- acqCompCAQ048 Keeps people at a distance; avoids close interpersonal relationships
- acqCompCAQ049 Basically distrustful of people in general
- acqCompCAQ050 Unpredictable and changeable in behavior and attitudes
- acqCompCAQ051 Genuinely values intellectual and cognitive matters
- acqCompCAQ052 Behaves in an assertive fashion
- acqCompCAQ053 Unable to delay gratification
- acqCompCAQ054 Emphasizes being with others; gregarious
- acqCompCAQ055 Self-defeating
- acqCompCAQ056 Responds to humor
- acqCompCAQ057 Interesting, arresting person
- acqCompCAQ058 Enjoys sensuous experiences (touch, taste, smell, physical contact)
- acqCompCAQ059 Concerned with own body and adequacy of physiological functioning
- acqCompCAQ060 Has insight into own motives and behavior
- acqCompCAQ061 Creates and exploits dependency in people
- acqCompCAQ062 Tends to be rebellious and non-conforming
- acqCompCAQ063 Judges self and other in conventional terms
- acqCompCAQ064 Socially perceptive of a wide range of interpersonal cues
- acqCompCAQ065 Pushes and tries to stretch limits
- acqCompCAQ066 Enjoys esthetic impressions; is esthetically reactive
- acqCompCAQ067 Self-indulgent
- acqCompCAQ068 Basically anxious
- acqCompCAQ069 Sensitive to anything that can be construed as a demand
- acqCompCAQ070 Behaves in an ethically consistent manner
- acqCompCAQ071 Has high aspiration level for self

- acqCompCAQ072 Concerned with own adequacy as a person
- acqCompCAQ073 Tends to perceive many different contexts in sexual terms
- acqCompCAQ074 Subjectively unaware of self-concern; feels satisfied with self
- acqCompCAQ075 Has a clear-cut, internally consistent personality
- acqCompCAQ076 Projects feelings and motivations onto others
- acqCompCAQ077 Appears straightforward, forthright, candid in dealing with others
- acqCompCAQ078 Feels cheated and victimized by life; self-pitying
- acqCompCAQ079 Ruminates and has persistent, preoccupying thoughts
- acqCompCAQ080 Interested in members of the opposite sex
- acqCompCAQ081 Physically attractive; good-looking
- acqCompCAQ082 Has fluctuating moods
- acqCompCAQ083 Able to see to the heart of important problems
- acqCompCAQ084 Cheerful
- acqCompCAQ085 Emphasizes communication through action and non-verbal behavior
- acqCompCAQ086 Repressive and dissociative tendencies; denies unpleasant thoughts and conflicts
- acqCompCAQ087 Interprets basically simple and clear-cut situations in complicated and particularizing ways
- acqCompCAQ088 Personally charming
- acqCompCAQ089 Compares self to others
- acqCompCAQ090 Concerned with philosophical problems
- acqCompCAQ091 Power-oriented; values power in self and others
- acqCompCAQ092 Has social poise and presence; appears socially at ease
- acqCompCAQ093 Behaves in gender-appropriate masculine or feminine style and manner
- acqCompCAQ094 Expresses hostile feelings directly
- acqCompCAQ095 Tends to offer advice
- acqCompCAQ096 Values own independence and autonomy
- acqCompCAQ097 Emotionally bland; has flattened affect
- acqCompCAQ098 Verbally fluent; can express ideas well
- acqCompCAQ099 Self-dramatizing; histrionic
- acqCompCAQ100 Does not vary roles; relates to everyone in the same way

Details

Subjects are listed as Rows (N=205). CAQ items ([caq.items](#)) (100 items)

Source

<http://psy2.fau.edu/~shermanr/index.html>

References

Sherman, R. A., Nave, C. S., & Funder, D. C. (2010). Situational similarity and personality predict behavioral consistency. *Journal of Personality and Social Psychology*, 99(2), 330-343

Examples

```
data(acq.comp)
head(acq.comp) #composites of two ratings
```

acq1	<i>Aquaintance (Number 1) CAQ ratings</i>
------	---

Description

This is an acquaintance rating of a participant's personality in the Riverside Situation Project.

Usage

```
data(acq1)
```

Format

A data frame with 205 observations on the following 100 variables.

acq1CAQ001 Critical, skeptical, not easily impressed
 acq1CAQ002 A genuinely dependable and responsible person
 acq1CAQ003 Has a wide range of interests
 acq1CAQ004 Talkative
 acq1CAQ005 Behaves in a giving way toward others
 acq1CAQ006 Fastidious, perfectionistic
 acq1CAQ007 Favors conservative values
 acq1CAQ008 Appears to have a high degree of intellectual capacity
 acq1CAQ009 Uncomfortable with uncertainty and complexity
 acq1CAQ010 Anxiety and tension find outlet in bodily symptoms
 acq1CAQ011 Protective of those close to him or her
 acq1CAQ012 Tends to be self-defensive
 acq1CAQ013 Thin-skinned; sensitive to criticism or interpersonal slight
 acq1CAQ014 Genuinely submissive; accepts domination comfortably
 acq1CAQ015 Skilled in social techniques of imaginative play, pretending, and humor
 acq1CAQ016 Introspective and concerned with self as an object
 acq1CAQ017 Sympathetic and considerate
 acq1CAQ018 Initiates humor

- acq1CAQ019 Seeks reassurance from others
- acq1CAQ020 Has a rapid personal tempo; behaves and acts quickly
- acq1CAQ021 Arouses nurturant feelings in others
- acq1CAQ022 Feels a lack of personal meaning in life
- acq1CAQ023 Extrapunitive; tends to transfer or project blame
- acq1CAQ024 Prides self on being objective,rational
- acq1CAQ025 Tends toward over-control of needs and impulses
- acq1CAQ026 Productive; gets things done
- acq1CAQ027 Shows condescending behavior in relations with others
- acq1CAQ028 Tends to arouse liking and acceptance
- acq1CAQ029 Turned to for advice and reassurance
- acq1CAQ030 Gives up and withdraws where possible in the face of frustration and adversity
- acq1CAQ031 Regards self as physically attractive
- acq1CAQ032 Aware of the impression made on others
- acq1CAQ033 Calm, relaxed in manner
- acq1CAQ034 Over-reactive to minor frustrations, irritable
- acq1CAQ035 Has warmth; has the capacity for close relationships; compassionate
- acq1CAQ036 Subtly negativistic; tends to undermine and obstruct
- acq1CAQ037 Guileful and deceitful, manipulative, opportunistic
- acq1CAQ038 Has hostility toward others
- acq1CAQ039 Thinks and associates ideas in unusual ways; has unconventional thought processes
- acq1CAQ040 Vulnerable to real or fancied threat, generally fearful
- acq1CAQ041 Moralistic
- acq1CAQ042 Reluctant to commit to any definite course of action; tends to delay or avoid action
- acq1CAQ043 Facially and/or gesturally expressive
- acq1CAQ044 Evaluates the motivation of others in interpreting situations
- acq1CAQ045 Has a brittle ego-defense system; does not cope well under stress or strainr
- acq1CAQ046 Engages in personal fantasy and daydreams
- acq1CAQ047 Has a readiness to feel guilt
- acq1CAQ048 Keeps people at a distance; avoids close interpersonal relationships
- acq1CAQ049 Basically distrustful of people in general
- acq1CAQ050 Unpredictable and changeable in behavior and attitudes
- acq1CAQ051 Genuinely values intellectual and cognitive matters
- acq1CAQ052 Behaves in an assertive fashion
- acq1CAQ053 Unable to delay gratification
- acq1CAQ054 Emphasizes being with others; gregarious
- acq1CAQ055 Self-defeating

- acq1CAQ056 Responds to humor
- acq1CAQ057 Interesting, arresting person
- acq1CAQ058 Enjoys sensuous experiences (touch, taste, smell, physical contact)
- acq1CAQ059 Concerned with own body and adequacy of physiological functioning
- acq1CAQ060 Has insight into own motives and behavior
- acq1CAQ061 Creates and exploits dependency in people
- acq1CAQ062 Tends to be rebellious and non-conforming
- acq1CAQ063 Judges self and other in conventional terms
- acq1CAQ064 Socially perceptive of a wide range of interpersonal cues
- acq1CAQ065 Pushes and tries to stretch limits
- acq1CAQ066 Enjoys esthetic impressions; is esthetically reactive
- acq1CAQ067 Self-indulgent
- acq1CAQ068 Basically anxious
- acq1CAQ069 Sensitive to anything that can be construed as a demand
- acq1CAQ070 Behaves in an ethically consistent manner
- acq1CAQ071 Has high aspiration level for self
- acq1CAQ072 Concerned with own adequacy as a person
- acq1CAQ073 Tends to perceive many different contexts in sexual terms
- acq1CAQ074 Subjectively unaware of self-concern; feels satisfied with self
- acq1CAQ075 Has a clear-cut, internally consistent personality
- acq1CAQ076 Projects feelings and motivations onto others
- acq1CAQ077 Appears straightforward, forthright, candid in dealing with others
- acq1CAQ078 Feels cheated and victimized by life; self-pitying
- acq1CAQ079 Ruminates and has persistent, preoccupying thoughts
- acq1CAQ080 Interested in members of the opposite sex
- acq1CAQ081 Physically attractive; good-looking
- acq1CAQ082 Has fluctuating moods
- acq1CAQ083 Able to see to the heart of important problems
- acq1CAQ084 Cheerful
- acq1CAQ085 Emphasizes communication through action and non-verbal behavior
- acq1CAQ086 Repressive and dissociative tendencies; denies unpleasant thoughts and conflicts
- acq1CAQ087 Interprets basically simple and clear-cut situations in complicated and particularizing ways
- acq1CAQ088 Personally charming
- acq1CAQ089 Compares self to others
- acq1CAQ090 Concerned with philosophical problems
- acq1CAQ091 Power-oriented; values power in self and others

- acq1CAQ092 Has social poise and presence; appears socially at ease
- acq1CAQ093 Behaves in gender-appropriate masculine or feminine style and manner
- acq1CAQ094 Expresses hostile feelings directly
- acq1CAQ095 Tends to offer advice
- acq1CAQ096 Values own independence and autonomy
- acq1CAQ097 Emotionally bland; has flattened affect
- acq1CAQ098 Verbally fluent; can express ideas well
- acq1CAQ099 Self-dramatizing; histrionic
- acq1CAQ100 Does not vary roles; relates to everyone in the same way

Details

Subjects are listed as Rows (N=205). CAQ items ([caq.items](#)) (100 items)

Source

<http://psy2.fau.edu/~shermanr/index.html>

References

Sherman, R. A., Nave, C. S., & Funder, D. C. (2010). Situational similarity and personality predict behavioral consistency. *Journal of Personality and Social Psychology*, 99(2), 330-343

Examples

```
data(acq1)
head(acq1) #acquaintance 1
```

acq2

Acquaintance (Number 2) CAQ ratings

Description

This is an acquaintance rating of a participant's personality in the Riverside Situation Project.

Usage

```
data(acq2)
```

Format

A data frame with 205 observations on the following 100 variables.

- acq2CAQ001 Critical, skeptical, not easily impressed
- acq2CAQ002 A genuinely dependable and responsible person
- acq2CAQ003 Has a wide range of interests
- acq2CAQ004 Talkative
- acq2CAQ005 Behaves in a giving way toward others
- acq2CAQ006 Fastidious, perfectionistic
- acq2CAQ007 Favors conservative values
- acq2CAQ008 Appears to have a high degree of intellectual capacity
- acq2CAQ009 Uncomfortable with uncertainty and complexity
- acq2CAQ010 Anxiety and tension find outlet in bodily symptoms
- acq2CAQ011 Protective of those close to him or her
- acq2CAQ012 Tends to be self-defensive
- acq2CAQ013 Thin-skinned; sensitive to criticism or interpersonal slight
- acq2CAQ014 Genuinely submissive; accepts domination comfortably
- acq2CAQ015 Skilled in social techniques of imaginative play, pretending, and humor
- acq2CAQ016 Introspective and concerned with self as an object
- acq2CAQ017 Sympathetic and considerate
- acq2CAQ018 Initiates humor
- acq2CAQ019 Seeks reassurance from others
- acq2CAQ020 Has a rapid personal tempo; behaves and acts quickly
- acq2CAQ021 Arouses nurturant feelings in others
- acq2CAQ022 Feels a lack of personal meaning in life
- acq2CAQ023 Extrapunitive; tends to transfer or project blame
- acq2CAQ024 Prides self on being objective,rational
- acq2CAQ025 Tends toward over-control of needs and impulses
- acq2CAQ026 Productive; gets things done
- acq2CAQ027 Shows condescending behavior in relations with others
- acq2CAQ028 Tends to arouse liking and acceptance
- acq2CAQ029 Turned to for advice and reassurance
- acq2CAQ030 Gives up and withdraws where possible in the face of frustration and adversity
- acq2CAQ031 Regards self as physically attractive
- acq2CAQ032 Aware of the impression made on others
- acq2CAQ033 Calm, relaxed in manner
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- acq2CAQ045 Has a brittle ego-defense system; does not cope well under stress or strain
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- acq2CAQ057 Interesting, arresting person
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- acq2CAQ060 Has insight into own motives and behavior
- acq2CAQ061 Creates and exploits dependency in people
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- acq2CAQ064 Socially perceptive of a wide range of interpersonal cues
- acq2CAQ065 Pushes and tries to stretch limits
- acq2CAQ066 Enjoys esthetic impressions; is esthetically reactive
- acq2CAQ067 Self-indulgent
- acq2CAQ068 Basically anxious
- acq2CAQ069 Sensitive to anything that can be construed as a demand
- acq2CAQ070 Behaves in an ethically consistent manner
- acq2CAQ071 Has high aspiration level for self
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- acq2CAQ089 Compares self to others
- acq2CAQ090 Concerned with philosophical problems
- acq2CAQ091 Power-oriented; values power in self and others
- acq2CAQ092 Has social poise and presence; appears socially at ease
- acq2CAQ093 Behaves in gender-appropriate masculine or feminine style and manner
- acq2CAQ094 Expresses hostile feelings directly
- acq2CAQ095 Tends to offer advice
- acq2CAQ096 Values own independence and autonomy
- acq2CAQ097 Emotionally bland; has flattened affect
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Details

Subjects are listed as Rows (N=205). CAQ items ([caq.items](#)) (100 items)

Source

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References

Sherman, R. A., Nave, C. S., & Funder, D. C. (2010). Situational similarity and personality predict behavioral consistency. *Journal of Personality and Social Psychology*, 99(2), 330-343

Examples

```
data(acq2)
head(acq2) #aquaintance 2
```

alpha.aci

Alpha Confidence Interval

Description

Computes the asymptotic confidence interval for Cronbach's alpha following the method outlined by Koning & Franses (2003).

Usage

```
alpha.aci(x, k, n, CI = 0.95)
```

Arguments

x	An alpha coefficient to compute a confidence interval around.
k	The number of items on which alpha was computed.
n	The number of sampling units (observations) on which alpha was computed.
CI	A numeric element between .00 and 1.00 indicating the desired confidence level.

Details

Koning & Franses (2003) describe several methods for computing confidence intervals around Cronbach's alpha coefficient. This function returns what Koning and Franses (2003) refer to as the asymptotic confidence interval for alpha. The confidence interval is asymptotic and not necessarily symmetrical. For more info, see Koning and Franses (2003).

Value

Lower Limit	Lower limit of confidence interval
Upper Limit	Upperlimit of confidence interval

Author(s)

Ryne A. Sherman

References

Koning, A. J. & Franses, P. H. (2003). Confidence Intervals for Cronbach's Alpha Coefficient values. ERIM Report Series Reference No. ERS-2003-041-MKT. Available at SSRN: <http://ssrn.com/abstract=423658>

See Also

[alpha.xci](#) [vector.alpha](#)

Examples

```
#Compute the asymptotic CI for an observed Cronbach's alpha
#of .7 on 200 observaitons from a 10 item scale'
alpha.aci(.7,10,200)
```

alpha.cov

Cronbach's Alpha of Covariance Matrix

Description

Returns Cronbach's alpha from a covariance matrix

Usage

```
alpha.cov(sigma)
```

Arguments

sigma A square covariance or correlation matrix

Details

If a correlation matrix is provided rather than a covariance matrix, the result is a standardized Cronbach's alpha

Value

Returns Standardized alpha when a correlation matrix is the input, and returns Raw alpha when a covariance matrix is input.

Author(s)

Ryne A. Sherman

See Also

[alpha](#)

Examples

```
data(RSPdata)
names(RSPdata)
# Forming a composite:
# We will first form a composite extraversion variable using
# BFI scores.
# Three items need to be reverse scored
sBFI6r <- 6 - RSPdata$sBFI6
sBFI21r <- 6 - RSPdata$sBFI21
```

```

sBFI31r <- 6 - RSPdata$sBFI31
  # Now put them all into one data.frame
ext.vars <- data.frame(RSPdata$sBFI11, sBFI6r, RSPdata$sBFI11,
RSPdata$sBFI16, sBFI21r, RSPdata$sBFI26, sBFI31r, RSPdata$sBFI36)
head(ext.vars) # Looks good
  # Get the internal consistency stats using the alpha() function in the
  # psych package
alpha(ext.vars)
  # We can also get alpha from the correlation/covariance matrices
alpha.cov(cor(ext.vars)) # Standardized Alpha
alpha.cov(cov(ext.vars)) # Raw Alpha

```

alpha.xci

Alpha Confidence Interval

Description

Computes the exact confidence interval for Cronbach's alpha if the item scores have a joint multivariate distribution, following the method outlined by Koning & Franses (2003).

Usage

```
alpha.xci(x, k, n, CI = 0.95)
```

Arguments

x	An alpha coefficient to compute a confidence interval around.
k	The number of items on which alpha was computed.
n	The number of sampling units (observations) on which alpha was computed.
CI	A numeric element between .00 and 1.00 indicating the desired confidence level.

Details

Koning & Franses (2003) describe several methods for computing confidence intervals around Cronbach's alpha coefficient. This function returns what Koning and Franses (2003) refer to as the exact confidence interval for alpha if the item scores have a joint multivariate distribution. The confidence interval is asymptotic and not necessarily symmetrical. For more info, see Koning and Franses (2003).

Value

comp1	Lower Limit of confidence interval
comp2	Upper Limit of confidence interval

Author(s)

Ryne A. Sherman

References

Koning, A. J. & Franses, P. H. (2003). Confidence Intervals for Cronbach's Alpha Coefficient values. ERIM Report Series Reference No. ERS-2003-041-MKT. Available at SSRN: <http://ssrn.com/abstract=423658>

See Also

[alpha.aci](#) [vector.alpha](#)

Examples

```
#Compute the asymptotic CI for an observed Cronbach's alpha
#of .7 on 200 observaitons for a 10 item scale'
alpha.xci(.7,10,200)
```

aov1way

One Way Anova

Description

Returns the results of a one-way ANOVA on a matrix in x

Usage

```
aov1way(x)
```

Arguments

x A matrix with each column corresponding to a different level of the IV

Details

Similar to the R function aov only this returns the effect size eta for the between-S effect

Value

A matrix displaying the ANOVA summary table.

Author(s)

Ryne A. Sherman

Examples

```
T1=rnorm(10,mean=1,sd=.5)
T2=rnorm(10,mean=1.1,sd=.45)
T3=rnorm(10,mean=1.2,sd=.4)
DVxIV=cbind(T1,T2,T3)
aov1way(DVxIV)
```

bargraph

*Bar Graph***Description**

A function for plotting bargraphs with error bars.

Usage

```
bargraph(DV, grp = NULL, barFUN = mean,
errFUN = c("ci", "se", "sd"), sides = 2, conf = 0.95, ...)
```

Arguments

DV	A numeric variable containing raw scores to be formed into the bars of the bargraph.
grp	Either (a) a single variable indicating the grouping factor, (b) a list of variables each indicating a different grouping factor, or (c) NULL (default) in which case only a single bar is graphed.
barFUN	The function used to create the bargraph. Usually mean is desired.
errFUN	A character element indicating the type of error bars to be calculated. There are four possible choices: "ci" (the default) uses a confidence interval for the mean with level indicated by the conf= argument. "se" uses 1 Standard Error from the mean. "sd" uses 1 Standard Deviation from the mean. NULL indicates no error bars are desired.
sides	A numeric indicating whether one-sided or two-sided error bars are desired.
conf	A numeric indicating the desired level of confidence if type "ci" is used for the errFUN argument.
...	Other arguments passed to the barplot() function including graphing parameters (e.g. 'ylim', 'col').

Details

This function plots a bargraph with error bars using raw data as input. This is different from and often more convenient than barplot() which requires the user to compute the values to be plotted and error bars outside of the function.

Author(s)

Ryne A. Sherman

See Also

[barplot](#) [egraph](#)

Examples

```
T1=rnorm(100,mean=5,sd=1)
times=rep(seq(1,5,1),20)
bargraph(DV=T1,grp=times,barFUN=mean,errFUN="ci",conf=.95,ylim=c(0,6))
```

beh.comp

Behavioral Composite

Description

This is a composite of a participants' behavior across 4 situations.

Usage

```
data(beh.comp)
```

Format

compRBQ001 Interviews others (if present) (e.g., asks a series of questions)

compRBQ002 Volunteers a large amount of information about self

compRBQ003 Seems interested in what someone had to say (Disregard whether interest appears "genuine" or "polite")

compRBQ004 Tries to control the situation (Disregard whether attempts at control succeed or not)

compRBQ005 Dominates the situation (Disregard intention, e.g., if P dominates the situation "by default" because other(s) present do very little, this item should receive high placement)

compRBQ006 Appears to be relaxed and comfortable

compRBQ007 Exhibits social skills (e.g., does things to make other(s) comfortable, keeps conversation moving, entertains or charms other(s))

compRBQ008 Is reserved and unexpressive (e.g., expresses little affect; acts in a stiff, formal manner)

compRBQ009 Laughs frequently (Disregard whether laughter appears to be "nervous" or "genuine")

compRBQ010 Smiles frequently

compRBQ011 Is physically animated; moves around a great deal

compRBQ012 Seems to like other(s) present (e.g., would probably like to be friends with them)

compRBQ013 Exhibits an awkward interpersonal style (e.g., seems to have difficulty knowing what to say, mumbles, fails to respond to other(s)' conversational advances)

- compRBQ014 Compares self to other(s) (whether others are present or not)
- compRBQ015 Shows high enthusiasm and a high energy level
- compRBQ016 Shows a wide range of interests (e.g., talks about many topics)
- compRBQ017 Talks at rather than with other(s) (e.g., conducts a monologue, ignores what others say)
- compRBQ018 Expresses agreement frequently (High placement implies agreement is expressed unusually often, e.g., in response to each and every statement made. Low placement implies unusual lack of expression of agreement.)
- compRBQ019 Expresses criticism (of anybody or anything) (Low placement implies expresses praise)
- compRBQ020 Is talkative (as observed in this situation)
- compRBQ021 Expresses insecurity (e.g., seems touchy or overly sensitive)
- compRBQ022 Shows physical signs of tension or anxiety (e.g., fidgets nervously, voice wavers)(Lack of signs of anxiety = middle placement; low placement = lack of signs under circumstances where you would expect to see them)
- compRBQ023 Exhibits a high degree of intelligence (NB: At issue is what is displayed in the interaction not what may or may not be latent. Thus, give this item high placement only if P actually says or does something of high intelligence. Low placement implies exhibition of low intelligence; medium placement = no information one way or the other)
- compRBQ024 Expresses sympathy (to anyone, i.e., including conversational references)(Low placement implies unusual lack of sympathy)
- compRBQ025 Initiates humor
- compRBQ026 Seeks reassurance (e.g., asks for agreement, fishes for praise)
- compRBQ027 Exhibits condescending behavior (e.g., acts as if self is superior to others [present, or otherwise])(Low placement implies acting inferior)
- compRBQ028 Seems likable (to other(s) present)
- compRBQ029 Seeks advice
- compRBQ030 Appears to regard self as physically attractive
- compRBQ031 Acts irritated
- compRBQ032 Expresses warmth (to anyone, e.g., include any references to "my close friend," etc)
- compRBQ033 Tries to undermine, sabotage or obstruct
- compRBQ034 Expresses hostility (no matter toward whom or what)
- compRBQ035 Is unusual or unconventional in appearance
- compRBQ036 Behaves in a fearful or timid manner
- compRBQ037 Is expressive in face, voice or gestures
- compRBQ038 Expresses interest in fantasy or daydreams (Low placement only if such interest is explicitly disavowed)
- compRBQ039 Expresses guilt (about anything)
- compRBQ040 Keep other(s) at a distance; avoids development of any sort of interpersonal relationship (Low placement implies behavior to get close to other(s))
- compRBQ041 Shows interest in intellectual or cognitive matters (e.g., by discussing an intellectual idea in detail or with enthusiasm)

- compRBQ042 Seems to enjoy the situation
- compRBQ043 Says or does something interesting
- compRBQ044 Says negative things about self (e.g., is self-critical; expresses feelings of inadequacy)
- compRBQ045 Displays ambition (e.g., passionate discussion of career plans, course grades, opportunities to make money)
- compRBQ046 Blames others (for anything)
- compRBQ047 Expresses self-pity or feelings of victimization
- compRBQ048 Expresses sexual interest (e.g., acts attracted to someone present; expresses interest in dating or sexual matters in general)
- compRBQ049 Behaves in a cheerful manner
- compRBQ050 Gives up when faced with obstacles (Low placement implies unusual persistence)
- compRBQ051 Behaves in a stereotypically masculine/feminine style or manner (Apply the usual stereotypes appropriate to the P's sex. Low placement implies behavior stereotypical of the opposite sex)
- compRBQ052 Offers advice
- compRBQ053 Speaks fluently and expresses ideas well
- compRBQ054 Emphasizes accomplishments of self, family or acquaintances (Low placement = emphasizes failures of these individuals)
- compRBQ055 Behaves in a competitive manner (Low placement implies cooperative behavior)
- compRBQ056 Speaks in a loud voice
- compRBQ057 Speaks sarcastically (e.g., says things (s)he does not mean; makes facetious comments that are not necessarily funny)
- compRBQ058 Makes or approaches physical contact with other(s) (Of any sort, including sitting unusually close without touching) (Low placement implies unusual avoidance of physical contact, such as large interpersonal distance)
- compRBQ059 Engages in constant eye contact with someone (Low placement implies unusual lack of eye contact)
- compRBQ060 Seems detached from the situation
- compRBQ061 Speaks quickly (Low placement = speaks slowly)
- compRBQ062 Acts playful
- compRBQ063 Other(s) seek advice from P
- compRBQ064 Concentrates on/works hard at a task (Low placement implies loafing)
- compRBQ065 Engages in physical activity (e.g., works up a sweat)(Low placement = almost completely sedentary)
- compRBQ066 Acts in a self-indulgent manner (e.g., spending, eating, or drinking)(Low placement implies self-denial)
- compRBQ067 Exhibits physical discomfort or pain (High placement = in excess of what seems proportionate; Low placement implies lack of these signs where expected)

Details

Subjects (N=205) are listed in rows. RBQ items ([rbqv3.items](#)) (67 items)

Source

<http://psy2.fau.edu/~shermanr/index.html>

References

Sherman, R. A., Nave, C. S., & Funder, D. C. (2010). Situational similarity and personality predict behavioral consistency. *Journal of Personality and Social Psychology*, 99(2), 330-343

Examples

```
data(beh.comp)
head(beh.comp)
```

bfi.set

Big Five Inventory Set

Description

These are Big Five Inventory self ratings of participants from the Riverside Situation Project.

Usage

```
data(bfi.set)
```

Format

A data frame with 205 observations on the following 44 variables.

sBFI1 Is talkative
sBFI2 Tends to find fault with others
sBFI3 Does a thorough job
sBFI4 Is depressed, blue
sBFI5 Is original, comes up with new ideas
sBFI6 Is reserved
sBFI7 Is helpful and unselfish with others
sBFI8 Can be somewhat careless
sBFI9 Is relaxed, handles stress well
sBFI10 Is curious about many different things
sBFI11 Is full of energy
sBFI12 Starts quarrels with others
sBFI13 Is a reliable worker
sBFI14 Can be tense
sBFI15 Is ingenious, a deep thinker

sBFI16 Generates a lot of enthusiasm
sBFI17 Has a forgiving nature
sBFI18 Tends to be disorganized
sBFI19 Worries a lot
sBFI20 Has an active imagination
sBFI21 Tends to be quiet
sBFI22 Is generally trusting
sBFI23 Tends to be lazy
sBFI24 Is emotionally stable, not easily upset
sBFI25 Is inventive
sBFI26 Has an assertive personality
sBFI27 Can be cold and aloof
sBFI28 Perseveres until the task is finished
sBFI29 Can be moody
sBFI30 Values artistic, aesthetic experiences
sBFI31 Is sometimes shy, inhibited
sBFI32 Is considerate and kind to almost everyone
sBFI33 Does things efficiently
sBFI34 Remains calm in tense situations
sBFI35 Prefers work that is routine
sBFI36 Is outgoing, sociable
sBFI37 Is sometimes rude to others
sBFI38 Makes plans and follows through with them
sBFI39 Gets nervous easily
sBFI40 Likes to reflect, play with ideas
sBFI41 Has few artistic interests
sBFI42 Likes to cooperate with others
sBFI43 Is easily distracted
sBFI44 Is sophisticated in art, music, or literature

Details

Participants (N=205) are in rows. BFI items (44 items) are in the columns.

Source

<http://psy2.fau.edu/~shermanr/index.html>

References

Sherman, R. A., Nave, C. S., & Funder, D. C. (2010). Situational similarity and personality predict behavioral consistency. *Journal of Personality and Social Psychology*, 99(2), 330-343

Examples

```
data(bfi.set)
head(bfi.set)
```

caq

California Adult Q-Set

Description

These are self ratings of personality using the California Adult Q-Set in the Riverside Situation Project.

Usage

```
data(caq)
```

Format

A data frame with 205 observations on the following 100 variables.

sCAQ001 Critical, skeptical, not easily impressed
sCAQ002 A genuinely dependable and responsible person
sCAQ003 Has a wide range of interests
sCAQ004 Talkative
sCAQ005 Behaves in a giving way toward others
sCAQ006 Fastidious, perfectionistic
sCAQ007 Favors conservative values
sCAQ008 Appears to have a high degree of intellectual capacity
sCAQ009 Uncomfortable with uncertainty and complexity
sCAQ010 Anxiety and tension find outlet in bodily symptoms
sCAQ011 Protective of those close to him or her
sCAQ012 Tends to be self-defensive
sCAQ013 Thin-skinned; sensitive to criticism or interpersonal slight
sCAQ014 Genuinely submissive; accepts domination comfortably
sCAQ015 Skilled in social techniques of imaginative play, pretending, and humor
sCAQ016 Introspective and concerned with self as an object
sCAQ017 Sympathetic and considerate
sCAQ018 Initiates humor
sCAQ019 Seeks reassurance from others
sCAQ020 Has a rapid personal tempo; behaves and acts quickly
sCAQ021 Arouses nurturant feelings in others

- sCAQ022 Feels a lack of personal meaning in life
- sCAQ023 Extrapunitive; tends to transfer or project blame
- sCAQ024 Prides self on being objective,rational
- sCAQ025 Tends toward over-control of needs and impulses
- sCAQ026 Productive; gets things done
- sCAQ027 Shows condescending behavior in relations with others
- sCAQ028 Tends to arouse liking and acceptance
- sCAQ029 Turned to for advice and reassurance
- sCAQ030 Gives up and withdraws where possible in the face of frustration and adversity
- sCAQ031 Regards self as physically attractive
- sCAQ032 Aware of the impression made on others
- sCAQ033 Calm, relaxed in manner
- sCAQ034 Over-reactive to minor frustrations, irritable
- sCAQ035 Has warmth; has the capacity for close relationships; compassionate
- sCAQ036 Subtly negativistic; tends to undermine and obstruct
- sCAQ037 Guileful and deceitful, manipulative, opportunistic
- sCAQ038 Has hostility toward others
- sCAQ039 Thinks and associates ideas in unusual ways; has unconventional thought processes
- sCAQ040 Vulnerable to real or fancied threat, generally fearful
- sCAQ041 Moralistic
- sCAQ042 Reluctant to commit to any definite course of action; tends to delay or avoid action
- sCAQ043 Facially and/or gesturally expressive
- sCAQ044 Evaluates the motivation of others in interpreting situations
- sCAQ045 Has a brittle ego-defense system; does not cope well under stress or strain
- sCAQ046 Engages in personal fantasy and daydreams
- sCAQ047 Has a readiness to feel guilt
- sCAQ048 Keeps people at a distance; avoids close interpersonal relationships
- sCAQ049 Basically distrustful of people in general
- sCAQ050 Unpredictable and changeable in behavior and attitudes
- sCAQ051 Genuinely values intellectual and cognitive matters
- sCAQ052 Behaves in an assertive fashion
- sCAQ053 Unable to delay gratification
- sCAQ054 Emphasizes being with others; gregarious
- sCAQ055 Self-defeating
- sCAQ056 Responds to humor
- sCAQ057 Interesting, arresting person
- sCAQ058 Enjoys sensuous experiences (touch, taste, smell, physical contact)

- sCAQ059 Concerned with own body and adequacy of physiological functioning
- sCAQ060 Has insight into own motives and behavior
- sCAQ061 Creates and exploits dependency in people
- sCAQ062 Tends to be rebellious and non-conforming
- sCAQ063 Judges self and other in conventional terms
- sCAQ064 Socially perceptive of a wide range of interpersonal cues
- sCAQ065 Pushes and tries to stretch limits
- sCAQ066 Enjoys esthetic impressions; is esthetically reactive
- sCAQ067 Self-indulgent
- sCAQ068 Basically anxious
- sCAQ069 Sensitive to anything that can be construed as a demand
- sCAQ070 Behaves in an ethically consistent manner
- sCAQ071 Has high aspiration level for self
- sCAQ072 Concerned with own adequacy as a person
- sCAQ073 Tends to perceive many different contexts in sexual terms
- sCAQ074 Subjectively unaware of self-concern; feels satisfied with self
- sCAQ075 Has a clear-cut, internally consistent personality
- sCAQ076 Projects feelings and motivations onto others
- sCAQ077 Appears straightforward, forthright, candid in dealing with others
- sCAQ078 Feels cheated and victimized by life; self-pitying
- sCAQ079 Ruminates and has persistent, preoccupying thoughts
- sCAQ080 Interested in members of the opposite sex
- sCAQ081 Physically attractive; good-looking
- sCAQ082 Has fluctuating moods
- sCAQ083 Able to see to the heart of important problems
- sCAQ084 Cheerful
- sCAQ085 Emphasizes communication through action and non-verbal behavior
- sCAQ086 Repressive and dissociative tendencies; denies unpleasant thoughts and conflicts
- sCAQ087 Interprets basically simple and clear-cut situations in complicated and particularizing ways
- sCAQ088 Personally charming
- sCAQ089 Compares self to others
- sCAQ090 Concerned with philosophical problems
- sCAQ091 Power-oriented; values power in self and others
- sCAQ092 Has social poise and presence; appears socially at ease
- sCAQ093 Behaves in gender-appropriate masculine or feminine style and manner
- sCAQ094 Expresses hostile feelings directly

- sCAQ095 Tends to offer advice
- sCAQ096 Values own independence and autonomy
- sCAQ097 Emotionally bland; has flattened affect
- sCAQ098 Verbally fluent; can express ideas well
- sCAQ099 Self-dramatizing; histrionic
- sCAQ100 Does not vary roles; relates to everyone in the same way

Details

Subjects are listed as Rows (N=205). CAQ items ([caq.items](#)) (100 items)

Source

<http://psy2.fau.edu/~shermanr/index.html>

References

Sherman, R. A., Nave, C. S., & Funder, D. C. (2010). Situational similarity and personality predict behavioral consistency. *Journal of Personality and Social Psychology*, 99(2), 330-343

Examples

```
data(caq)
head(caq)
data(caq.items)#lets look at the items for the CAQ
caq.items
```

caq.items

CAQ Items

Description

This is the item content from the California Adult Q-Sort (Block, 1961), a 100 item personality measure.

Usage

```
data(caq.items)
```

Format

A data frame with content from 100 CAQ items.

- items** CAQ001 - Critical, skeptical, not easily impressed
 CAQ002 - A genuinely dependable and responsible person
 CAQ003 - Has a wide range of interests
 CAQ004 - Talkative
 CAQ005 - Behaves in a giving way toward others
 CAQ006 - Fastidious, perfectionistic
 CAQ007 - Favors conservative values
 CAQ008 - Appears to have a high degree of intellectual capacity
 CAQ009 - Uncomfortable with uncertainty and complexity
 CAQ010 - Anxiety and tension find outlet in bodily symptoms
 CAQ011 - Protective of those close to him or her
 CAQ012 - Tends to be self-defensive
 CAQ013 - Thin-skinned; sensitive to criticism or interpersonal slight
 CAQ014 - Genuinely submissive; accepts domination comfortably
 CAQ015 - Skilled in social techniques of imaginative play, pretending, and humor
 CAQ016 - Introspective and concerned with self as an object
 CAQ017 - Sympathetic and considerate
 CAQ018 - Initiates humor
 CAQ019 - Seeks reassurance from others
 CAQ020 - Has a rapid personal tempo; behaves and acts quickly
 CAQ021 - Arouses nurturant feelings in others
 CAQ022 - Feels a lack of personal meaning in life
 CAQ023 - Extrapunitive; tends to transfer or project blame
 CAQ024 - Prides self on being objective,rational
 CAQ025 - Tends toward over-control of needs and impulses
 CAQ026 - Productive; gets things done
 CAQ027 - Shows condescending behavior in relations with others
 CAQ028 - Tends to arouse liking and acceptance
 CAQ029 - Turned to for advice and reassurance
 CAQ030 - Gives up and withdraws where possible in the face of frustration and adversity
 CAQ031 - Regards self as physically attractive
 CAQ032 - Aware of the impression made on others
 CAQ033 - Calm, relaxed in manner
 CAQ034 - Over-reactive to minor frustrations, irritable
 CAQ035 - Has warmth; has the capacity for close relationships; compassionate
 CAQ036 - Subtly negativistic; tends to undermine and obstruct
 CAQ037 - Guileful and deceitful, manipulative, opportunistic
 CAQ038 - Has hostility toward others
 CAQ039 - Thinks and associates ideas in unusual ways; has unconventional thought processes
 CAQ040 - Vulnerable to real or fancied threat, generally fearful
 CAQ041 - Moralistic
 CAQ042 - Reluctant to commit to any definite course of action; tends to delay or avoid action
 CAQ043 - Facially and/or gesturally expressive
 CAQ044 - Evaluates the motivation of others in interpreting situations
 CAQ045 - Has a brittle ego-defense system; does not cope well under stress or strain

- CAQ046 - Engages in personal fantasy and daydreams
- CAQ047 - Has a readiness to feel guilt
- CAQ048 - Keeps people at a distance; avoids close interpersonal relationships
- CAQ049 - Basically distrustful of people in general
- CAQ050 - Unpredictable and changeable in behavior and attitudes
- CAQ051 - Genuinely values intellectual and cognitive matters
- CAQ052 - Behaves in an assertive fashion
- CAQ053 - Unable to delay gratification
- CAQ054 - Emphasizes being with others; gregarious
- CAQ055 - Self-defeating
- CAQ056 - Responds to humor
- CAQ057 - Interesting, arresting person
- CAQ058 - Enjoys sensuous experiences (touch, taste, smell, physical contact)
- CAQ059 - Concerned with own body and adequacy of physiological functioning
- CAQ060 - Has insight into own motives and behavior
- CAQ061 - Creates and exploits dependency in people
- CAQ062 - Tends to be rebellious and non-conforming
- CAQ063 - Judges self and other in conventional terms
- CAQ064 - Socially perceptive of a wide range of interpersonal cues
- CAQ065 - Pushes and tries to stretch limits
- CAQ066 - Enjoys esthetic impressions; is esthetically reactive
- CAQ067 - Self-indulgent
- CAQ068 - Basically anxious
- CAQ069 - Sensitive to anything that can be construed as a demand
- CAQ070 - Behaves in an ethically consistent manner
- CAQ071 - Has high aspiration level for self
- CAQ072 - Concerned with own adequacy as a person
- CAQ073 - Tends to perceive many different contexts in sexual terms
- CAQ074 - Subjectively unaware of self-concern; feels satisfied with self
- CAQ075 - Has a clear-cut, internally consistent personality
- CAQ076 - Projects feelings and motivations onto others
- CAQ077 - Appears straightforward, forthright, candid in dealing with others
- CAQ078 - Feels cheated and victimized by life; self-pitying
- CAQ079 - Ruminates and has persistent, preoccupying thoughts
- CAQ080 - Interested in members of the opposite sex
- CAQ081 - Physically attractive; good-looking
- CAQ082 - Has fluctuating moods
- CAQ083 - Able to see to the heart of important problems
- CAQ084 - Cheerful
- CAQ085 - Emphasizes communication through action and non-verbal behavior
- CAQ086 - Repressive and dissociative tendencies; denies unpleasant thoughts and conflicts
- CAQ087 - Interprets basically simple and clear-cut situations in complicated and particularizing ways
- CAQ088 - Personally charming
- CAQ089 - Compares self to others
- CAQ090 - Concerned with philosophical problems
- CAQ091 - Power-oriented; values power in self and others
- CAQ092 - Has social poise and presence; appears socially at ease

CAQ093 - Behaves in gender-appropriate masculine or feminine style and manner
 CAQ094 - Expresses hostile feelings directly
 CAQ095 - Tends to offer advice
 CAQ096 - Values own independence and autonomy
 CAQ097 - Emotionally bland; has flattened affect
 CAQ098 - Verbally fluent; can express ideas well
 CAQ099 - Self-dramatizing; histrionic
 CAQ100 - Does not vary roles; relates to everyone in the same way

Source

<http://psy2.fau.edu/~shermanr/index.html>

References

Block, J. (1961). The Q-Sort Method in Personality Assessment and Psychiatric Research. Springfield, IL: Charles C. Thomas.

Examples

```
data(caq.items)
caq.items
```

catseye

Cat's Eye

Description

A function for plotting summary statistics with error bars and error distributions.

Usage

```
catseye(DV, grp = NULL, plotFUN = mean, errFUN = c("ci", "se", "sd"),
  conf = 0.95, xpoints = NULL, grp.names = NULL,
  tick = FALSE, ylim = NULL, col = "gray", len = 0, ...)
```

Arguments

DV	A numeric variable containing raw scores to be summarized in the graph.
grp	Either (a) a single variable indicating the grouping factor, (b) a list of variables each indicating a different grouping factors, or (c) NULL (default) in which case only a single bar is graphed.
plotFUN	The function used to create the summary statistic. Usually mean is desired.
errFUN	A character element indicating the type of error bars to be calculated. There are four possible choices: "ci" (the default) uses a confidence interval for the mean with level indicated by the conf= argument. "se" uses 1 Standard Error from the mean. "sd" uses 1 Standard Deviation from the mean. NULL indicates no error bars/distributions are desired.

conf	A numeric between .00 and 1.00, indicating the desired level of confidence if type "ci" is used for the errFUN argument.
xpoints	A vector indicating the location on the x-axis for each group. Can be used to create space between certain groups.
grp.names	A character vector providing the names for the different groups (conditions).
tick	A logical indicating whether tick marks should be drawn on the x-axis for each group.
ylim	A numeric vector of length 2 indicating the lower and upper limits of the y-axis.
col	A specification of the plotting color for the error distributions. See par .
len	A numeric indicating the desired length of the error bar "caps" in inches.
...	Other arguments passed to the plot() function including graphing parameters.

Details

This function plots a summary statistic with error bars and distributions using raw data as input. This is different from, and often more convenient and useful, than `barplot()` which requires the user to compute the values to be plotted and error bars outside of the function. This is a preferred form of presenting group means (rather than bargraphs) because bargraphs tend to suggest more accuracy than in reality (Cumming, 2012, 2013).

Author(s)

Ryne A. Sherman

References

Cumming, G. (2012). *Understanding the New Statistics: Effect Sizes, Confidence Intervals, and Meta-Analysis*. New York: Routledge.

Cumming, G. (2013). *The New Statistics: Why and How*. Psychological Science.

See Also

[bargraph](#) [barplot](#) [egraph](#)

Examples

```
# A Single Group
f <- rnorm(50)
catseye(f, conf=.95, xlab="", ylab="DV", las=1)
catseye(f, conf=.95, xlab="", ylab="DV", las=1, col="light green",
  main="Cat's Eye Plot for a Single Group Mean", sub="95 percent CI")

# Two Groups
f2 <- rnorm(100)
g <- rep(1:2, each=50)
catseye(f2, grp=g, xlab="Conditions", ylab="DV",
  grp.names=c("Control", "Experimental"), las=1)
```

```

catseye(f2, grp=g, conf=.8, xlab="", ylab="DV",
grp.names=c("Control", "Experimental"), las=1, col="cyan",
main="Two Group Mean Comparison", sub="80 percent CIs")

# Three Groups
f3 <- c(rnorm(10), rnorm(10, mean=.5), rnorm(10, mean=1, sd=2))
g2 <- rep(1:3, each=10)
catseye(f3, grp=g2, conf=.95, xlab="Conditions", ylab="DV",
grp.names=c("Group 1", "Group 2", "Group 3"), las=1, col="cyan",
main="Three Group Mean Comparison")

# A 2 x 2 Design
f4 <- rnorm(200)
fac1 <- rep(1:2, each=100)
fac2 <- rep(3:4, 100)
catseye(f4, list(fac1, fac2), xlab="Conditions", ylab="DV",
grp.names=c("High/High", "High/Low", "Low/High", "Low/Low"), las=1,
col="orange", main="A 2 x 2 Experiment Comparison")
# Using the xpoints argument to create visual space
catseye(f4, list(fac1, fac2), xlab="Conditions", ylab="DV",
grp.names=c("High/High", "High/Low", "Low/High", "Low/Low"), xpoints=c(1,2,4,5),
las=1, col="orange", main="A 2 x 2 Experiment Comparison")

# A 2 x 3 Design
f5 <- rnorm(180)
fac1 <- rep(1:2, each=90)
fac2 <- rep(3:5, 60)
catseye(f5, list(fac1, fac2), xlab="Conditions", ylab="DV",
grp.names=c("High/A", "High/B", "High/C", "Low/A", "Low/B", "Low/C"),
las=1, main="A 2 x 3 Experiment Comparison")
# Using the xpoints argument to create visual space
catseye(f5, list(fac1, fac2), xlab="Conditions", ylab="DV",
grp.names=c("High/A", "High/B", "High/C", "Low/A", "Low/B", "Low/C"),
xpoints=c(1,2,3,5,6,7), las=1, main="A 2 x 3 Experiment Comparison")

```

composite

Composite

Description

Returns a mean composite for each observation (row) in the set

Usage

```
composite(set, R = NULL, Zitems = FALSE, maxScore = NULL, rel=FALSE, nomiss = 0.8, tr = 0)
```

Arguments

`set` A matrix or data.frame of the scores in the columns to be averaged

R	A numeric vector specifying the columns in set that should be reverse scored prior to averaging.
Zitems	A logical indicating whether the items should be standardized (Z-scored) before creating a composite. This is probably most useful when items have been measured on different scales.
maxScore	A numeric element indicating the maximum possible score on each scale. If R = NULL then this is not needed. If not provided, composite will try to find the maximum possible score on its own.
rel	A logical indicating whether the reliability information (alpha, avg r, etc.) for the composite should be printed (not returned however).
nomiss	A numeric vector specifying the proportion of valid cases in set (i.e. data that must not be NA) for the mean to be returned
tr	Amount of trimming to be done before calculating the mean

Details

This function is used to create a unit-weighted composite of the variables listed in the columns of the matrix or data.frame "set" for each row. The nomiss option lets one specify the proportion of valid cases required for the composite mean to be computed. By default, the mean is computed if at least 80 percent of the data in the the row are valid, the mean results otherwise NA results.

Value

Returns a list of composite scores corresponding to each row of 'set'

Author(s)

Ryne A. Sherman

Examples

```
data(RSPdata)
names(RSPdata)
# Forming a composite:
# We will form a composite extraversion variable using BFI scores.
# First put the variables into one data.frame
ext.vars <- data.frame(RSPdata$sBFI1, RSPdata$sBFI6, RSPdata$sBFI11,
RSPdata$sBFI16, RSPdata$sBFI21, RSPdata$sBFI26, RSPdata$sBFI31, RSPdata$sBFI36)
head(ext.vars) # Looks good
# Three items need to be reverse scored
ext.comp <- composite(ext.vars, R = c(2,5,7), rel = TRUE)
ext.comp
# Let's say we want to include the CAQ item "04 - Is a talkative Individual" in our
# extraversion composite. But is is measured on a 1 to 9 scale while the BFI variables
# are measured on a 1 to 5 scale. We should set Zitems=TRUE to Z-score all of the
# items before compositing.
ext.comp2 <- composite(data.frame(ext.vars, RSPdata$sCAQ004),
R = c(2,5,7), rel= TRUE, Zitems = TRUE)
describe(ext.comp2) # mean is zero
```

`cor.comb`*Combine Correlations*

Description

This function was designed to meta-analytically combine the correlations of X and Y when the data come from non-independent samples.

Usage

```
cor.comb(y1, y2, y3, y4, x1, x2, x3, x4, sims = 1000, hist = FALSE,
         rnd = 5, CI = TRUE, simple = FALSE, seed = 2)
```

Arguments

<code>y1</code>	vector paired with x1
<code>y2</code>	vector paired with x2
<code>y3</code>	vector paired with x3
<code>y4</code>	vector paired with x 4
<code>x1</code>	vector paired with y1
<code>x2</code>	vector paired with y2
<code>x3</code>	vector paired with y3
<code>x4</code>	vector paired with y4
<code>sims</code>	Number of simulations to be run in the randomization test (1000 by default).
<code>hist</code>	Logical: A histogram of the randomized results may be displayed by the 'hist' = 'TRUE' option.
<code>rnd</code>	An integer indicating the number of decimal places when results are displayed
<code>CI</code>	Logical: If the CI option is marked TRUE, 95 percent confidence intervals based on the randomization test results from the empirical sampling distribution will be output.
<code>simple</code>	Logical: When simple = F, the Weighted r is also provided for "Stouffer p" comparison. When simple = T, only the Unweighted r is returned.
<code>seed</code>	An integer indicating the starting value for a random seed. If no random seed is desired, set 'seed'=FALSE

Details

This function computes the average correlation for each of the 4 X-Y pairs and performs a randomization test to determine the probability of observing such a result under the null hypothesis of X and Y pairs are random.

Value

The output provides three slightly different types of p-values. The "normal p" provides the p-value that comes from dividing the difference between the observed meta-analytically combined correlation and the empirically simulated meta-analytically combined correlation by the standard deviation (i.e. standard error) of the empirical sampling distribution. This value is treated as a normal deviate Z and the p-value associated with that Z is computed. The "rand p" is given by the 2-tailed cumulative density of the empirically derived curve at the observed meta-analytically combined value. Finally, the "Stouffer p" is the p-value associated with a typical fixed effects approach to meta-analysis where the standard normal deviate Z -scores associated with each of the p-values for each of the four observed correlations are summed and divided by the squareroot of the number of correlations creating the sum. Before summing, the Z -values must be turned to face the same direction (i.e. if $r > 0$, $Z > 0$; if $r < 0$, $Z < 0$). While this method is typically associated with a weighted effect size estimate and this function computes an unweighted effect size estimate, the weighted and unweighted effect size estimates are equivalent to the degree to which the size of the samples are equivalent. When `simple = F`, the Weighted r is also provided for comparison. When `simple = T`, only the Unweighted r is returned.

Note

A note on the `cor.comb` function: The `cor.comb` function can easily be replaced by MLM procedures. While there is some nice interpretability features for the `cor.comb` function, MLM is generally more accepted in the literature. This function is probably most useful for comparisons with MLM results.

Author(s)

Ryne A. Sherman

See Also

[cor.comb.rep](#)

Examples

```
data(RSPdata)
names(RSPdata)
#Computing the relationship between self reported extraversion
#and Behavior measured by RBQ1 "Interviews others" over 4 situations
data(rbv3.items)
rbqv3.items # the RBQ content
# The correlations between extraversion and RBQ001 in Situation 1
cor(RSPdata$sEXT,RSPdata$v2rbq001)
cor(RSPdata$sEXT,RSPdata$v3rbq001) # ... Situation 2
cor(RSPdata$sEXT,RSPdata$v4rbq001) # ... Situation 3
cor(RSPdata$sEXT,RSPdata$v5rbq001) # ... Situation 4
#now to use cor.comb to combine meta-analytically
cor.comb(y1=RSPdata$sEXT,y2=RSPdata$sEXT,y3=RSPdata$sEXT,
y4=RSPdata$sEXT,x1=RSPdata$v2rbq001,x2=RSPdata$v3rbq001,
x3=RSPdata$v4rbq001,x4=RSPdata$v5rbq001,hist=TRUE)
```

 cor.comb.rep

Replicabilities and Correlations

Description

A function for getting the replicabilities for cor.comb() correlations See cor.comb() and vector.splithalf() for more information.

Usage

```
cor.comb.rep(x1, x2, x3, x4, set1, set2, set3, set4, sims = 100, CI = 0.95)
```

Arguments

x1	vector paired with set1
x2	vector paired with set2
x3	vector paired with set3
x4	vector paired with set4
set1	matrix paired with x1
set2	matrix paired with x2
set3	matrix paired with x3
set4	matrix paired with x 4
sims	Number of simulations to be run in the randomization test (100 by default).
CI	Desired confidence interval limits. Default is .95.

Value

N	The sample size. *See 'note'
Rep	Estimated replicability
SE	Standard Error of the estimated replicability
UL	Upper limit of the CI
LL	Lower limit of the CI

Note

Be wary that this function bases the reported "N" on the N of x1.

Author(s)

Ryne A. Sherman

See Also

[cor.comb](#) [vector.splithalf](#)

Examples

```

data(RSPdata)
names(RSPdata)
#Computing the relationship between self reported extraversion and
#Behavior measured by RBQ1 "Interviews others"over 4 situations
data(rbv3.items)
rbqv3.items # the RBQ content
# The correlations between extraversion and RBQ001 in Situation 1
cor(RSPdata$sEXT,RSPdata$v2rbq001)
cor(RSPdata$sEXT,RSPdata$v3rbq001) # ... Situation 2
cor(RSPdata$sEXT,RSPdata$v4rbq001) # ... Situation 3
cor(RSPdata$sEXT,RSPdata$v5rbq001) # ... Situation 4
#now to use cor.comb to combine meta-analytically
cor.comb(y1=RSPdata$sEXT,y2=RSPdata$sEXT,y3=RSPdata$sEXT,y4=RSPdata$sEXT,
         x1=RSPdata$v2rbq001,x2=RSPdata$v3rbq001,x3=RSPdata$v4rbq001,x4=RSPdata$v5rbq001)
#now to test the replicability of these results
data(v2rbq)
data(v3rbq)
data(v4rbq)
data(v5rbq)

# Note in practice sims = 100 or more might be preferred
cor.comb.rep(x1=RSPdata$sEXT,x2=RSPdata$sEXT,x3=RSPdata$sEXT,
            x4=RSPdata$sEXT,set1=v2rbq,set2=v3rbq,set3=v4rbq,set4=v5rbq, sims=5)

```

decomp

*Decomposition of Effects***Description**

A function for decomposing a matrix into its grand mean, row effects, column effects, and unique effects and examining the association of these effects with corresponding effects in another matrix

Usage

```
decomp(x, y=NULL, na.rm=TRUE, use="pair")
```

Arguments

x	A matrix of data to decompose
y	An optional criterion matrix of data to examine for componential similarity to x
na.rm	A logical indicating if missing values should be removed
use	A character indicating how to handle missing data for correlations

Details

Following Cronbach (1955) this function decomposes the data matrices in x and y and returns a number of characteristics about these matrices including four measures of their similarity. See value section.

Value

A list containing the following

GrandMeanX	The grand mean of the x matrix
GrandMeanY	The grand mean of the y matrix
RowEffectX	The mean of the rows for the x matrix
RowEffectY	The mean of the rows for the y matrix
ColEffectX	The mean of the columns for the x matrix
ColEffectY	The mean of the columns for the y matrix
DecompositionX	The unique effects in the X matrix after decomposition
DecompositionY	The unique effects in the Y matrix after decomposition
RowUniqueCor	A vector containing the correlations between the corresponding rows of the decomposed matrices
ColUniqueCor	A vector containing the correlations between the corresponding columns of the decomposed matrices
VarComp	A data.frame containing the variance components for rows, columns, and interactions
Stats	A 4 x 1 matrix containing 4 similarity components (only returned if a criterion matrix y is provided) Elevation Accuracy: The grand mean of x minus the grand mean of y Differential Elevation: The correlation between the row effects Stereotype Accuracy: The correlation between the column effects Differential Accuracy: The correlation between the uniquenesses

References

Cronbach, L. J. (1955). Processes affecting scores on "understanding of others" and "assumed similarity." *Psychological Bulletin*, 52, 177-193.

Examples

```
data(exsitu)
data(insitu)
# Decomposition of the column and row effects of a single data matrix
decomp(exsitu)
# Decomposition of the column and row effects of two data matrices including
# the similarities (correlations) between the row, column, and unique effects.
decomp(exsitu, insitu)
```

`describe.r`*Descriptive Statistics for Correlations*

Description

Returns the descriptive statistics for a vector, matrix, or data.frame of correlation coefficients stored in `x` by using fisher's `r` to `z` transformation, computing the values, and then back transforming the values using fisher's `z` to `r` transformation.

Usage

```
describe.r(x, na.rm = TRUE, tr = 0.2, type = 3)
```

Arguments

<code>x</code>	A vector, matrix, or data.frame object of correlation coefficients.
<code>na.rm</code>	A logical indicating whether NA values should be removed before calculations are done.
<code>tr</code>	A numeric element between .00 and .50 specifying the amount of trimming to be done for the calculation of the trimmed mean.
<code>type</code>	Which estimate of kurtosis should be used? See the <code>describe</code> function in the 'psych' package.

Details

The `psych` package function `describe` computes a number of descriptive statistics for ordinary data. However, correlation coefficients are typically `r`-to-`z` transformed before computing such statistics. This function makes getting the descriptive statistics for correlation coefficients easy by doing such transformations.

Value

A data.frame of descriptive statistics: item name, item number, number of valid cases, mean, standard deviation, median, trimmed mean, mad: median absolute deviation (from the median), minimum, maximum, skew, kurtosis, standard error.

Author(s)

Ryne A. Sherman

See Also

[describe](#)

Examples

```
data(caq)
data(acq.comp)
mycors <- Profile.r(caq, acq.comp) # Get profile agreement correlations
describe.r(mycors)
```

diffPlot

*Difference Plot***Description**

A function for creating a Difference Plot between two groups.

Usage

```
diffPlot(x, ...)

## Default Method
## Default S3 method:
diffPlot(x, y, plotFUN=mean, errFUN=c("ci", "se", "sd"), conf=.95,
         grp.names=NULL, var.equal=FALSE, paired=FALSE, ylim=NULL, ...)

## Method for class 'formula'
## S3 method for class 'formula'
diffPlot(formula, data = NULL, plotFUN=mean, errFUN=c("ci", "se", "sd"), conf=.95,
         grp.names=NULL, var.equal=FALSE, paired=FALSE, ylim=NULL, ...)
```

Arguments

x	A single variable with exactly two levels indicating the grouping factor. If x is a grouping factor, a second argument 'y' must be passed with as numeric vector of data values to be plotted.
y	Numeric vector of data values to be plotted
formula	A formula of the form lhs ~ rhs where lhs is a numeric vector containing the data values and rhs is a variable with exactly two levels giving the corresponding groups.
data	An optional data frame containing the variables in the formula.
plotFUN	The function used to create the summary statistic. Usually mean is desired.
errFUN	A character element indicating the type of error bars to be calculated. There are four possible choices: "ci" (the default) uses a confidence interval for the mean with level indicated by the conf= argument. "se" uses 1 Standard Error from the mean. "sd" uses 1 Standard Deviation from the mean. NULL indicates no error bars are desired.
conf	A numeric indicating the desired level of confidence if type "ci" is used for the errFUN argument.

grp.names	A character vector of length 2 providing the names for the two different groups (conditions, time-points).
var.equal	A logical indicating whether it should be assumed that the variances of the two groups on the DV are equal. Defaults to FALSE.
paired	A logical indicating whether the data are paired.
ylim	The limits of the plot on the y-axis.
...	Other arguments passed to the plot() and axis() functions including graphing parameters (e.g. 'col').

Details

This function creates a difference plot with error bars using raw data as input for either two independent group or dependent measures designs. This is a preferred way of graphical displaying group means that are directly compared (rather than bargraphs) because it provides information about the estimated size of the difference and the accuracy of that estimate (Cumming, 2012).

Author(s)

Ryne A. Sherman

References

Cumming, G. (2012). *Understanding the New Statistics: Effect Sizes, Confidence Intervals, and Meta-Analysis*. New York: Routledge.

See Also

[bargraph](#) [egraph](#)

Examples

```
# Independent Groups, default method
y <- rnorm(100)
g <- rep(1:2, each=50)
diffPlot(g, y, ylab="DV", xlab="", main="Plot of Means with Floating Axis for Mean Difference",
  grp.names=c("Control", "Experimental"), sub="Arms Indicate 95 Percent CIs")
# Independent Groups, formula method
diffPlot(y ~ g, ylab="DV", xlab="",
  main="Plot of Means with Floating Axis for Mean Difference",
  grp.names=c("Control", "Experimental"), sub="Arms Indicate 95 Percent CIs")
# Dependent Groups
library(mvtnorm)
myData <- rmvnorm(100, mean=c(0,.4), sigma=matrix(c(1,.8,.8,1), nrow=2, byrow=TRUE))
diffPlot(myData[,1], myData[,2], paired=TRUE, ylab="DV", xlab="",
  main="Plot of Dependent Means with Floating Axis for Mean Difference",
  grp.names=c("Time 1", "Time 2"), sub="Arms Indicate 95 Percent CIs")
```

e.bars

Error Bars

Description

A function for plotting error bars onto barplots.

Usage

```
e.bars(graph, m, ebl, sides = 2, length = 0)
```

Arguments

graph	A vector of x-coordinates at which to plot the error bars. Alternatively, an object resulting from <code>barplot()</code> may be used.
m	A vector indicating the centers for each error bar (e.g., group means)
ebl	A vector indicating the error bar lengths
sides	A numeric indicating whether one-sided or two-sided error bars are desired.
length	A numeric indicating the length of the "caps" of the error bars

Details

Plots error bars for barplots, but can be used generically for other error bar plotting.

Author(s)

Ryne A. Sherman

See Also

[bargraph](#)

Examples

```
#making random data
y1 <- rnorm(30, mean = 5, sd = 1.5)
y2 <- rnorm(30, mean = 8, sd = 1.2)
#simple barplot
mygraph <- barplot(c(mean(y1),mean(y2)), ylim=c(0,10))
#plotting the error bars
library(sciplot) # To get the se() function
e.bars(mygraph, c(mean(y1),mean(y2)), ebl=c(se(y1),se(y2)), sides = 2, length = 0.08)
```

Description

A function for plotting a summary statistics with error bars.

Usage

```
egraph(DV, grp = NULL, plotFUN = mean, errFUN = c("ci", "se", "sd"),
sides = 2, conf = 0.95, xpoints = NULL,
grp.names = NULL, tick = FALSE, ylim = NULL, len = 0, ...)
```

Arguments

DV	A numeric variable containing raw scores to be summarized in the graph.
grp	Either (a) a single variable indicating the grouping factor, (b) a list of variables each indicating a different grouping factors, or (c) NULL (default) in which case only a single bar is graphed.
plotFUN	The function used to create the summary statistic. Usually mean is desired.
errFUN	A character element indicating the type of error bars to be calculated. There are four possible choices: "ci" (the default) uses a confidence interval for the mean with level indicated by the conf= argument. "se" uses 1 Standard Error from the mean. "sd" uses 1 Standard Deviation from the mean. NULL indicates no error bars are desired.
sides	A numeric indicating whether one-sided or two-sided error bars are desired.
conf	A numeric between .00 and 1.00 indicating the desired level of confidence if type "ci" is used for the errFUN argument.
xpoints	A vector indicating the location on the x-axis for each group. Can be used to create space between certain groups.
grp.names	A character vector providing the names for the different groups (conditions).
tick	A logical indicating whether tick marks should be drawn on the x-axis for each group.
ylim	A numeric vector of length 2 indicating the lower and upper limits of the y-axis.
len	A numeric indicating the desired length of the error bar "caps" in inches.
...	Other arguments passed to the plot() function including graphing parameters.

Details

This function plots a summary statistic with error bars using raw data as input. This is different from, and often more convenient, than `barplot()` which requires the use to compute the values to be plotted and error bars outside of the function. This is a preferred form of presenting group means (rather than bargraphs) because bargraphs tend to suggest more accuracy than in reality (Cumming, 2012).

Author(s)

Ryne A. Sherman

References

Cumming, G. (2012). *Understanding the New Statistics: Effect Sizes, Confidence Intervals, and Meta-Analysis*. New York: Routledge.

See Also

[bargraph](#) [barplot](#)

Examples

```
#Making some random data
y <- rnorm(100)
x <- rep(c(1,2),50)
z <- c(1,rep(c(1,2,3),33))
zz <- rep(c(1:4),25)
x2 <- rep(1:2, each=50)
#plotting
egraph(y)
egraph(y, xlab="", ylab="DV", las=1)
egraph(y, x, xlab="Conditions", ylab="DV", las=1)
egraph(y, z, xlab="Conditions", ylab="DV", las=1)
egraph(y, zz, xlab="", ylab="DV", las=1, font.main=1,
main="my title", sub="Arms Indicate 95 percent CIs")
egraph(y, zz, xlab="Conditions", ylab="DV", las=1, font.main=1,
main="my title", xpoints=c(1,1.5, 4,4.5),grp.names=c("A","B", "C", "D"),
sub="Arms Indicate 95 percent CIs", sides=1)
```

exsitu

External Ratings of Situations

Description

These are ratings of 10 situations (columns) completed by external raters on 8 characteristics (rows).

Usage

```
data(exsitu)
```

Format

A matrix containing ratings of 10 situations (columns) on 8 characteristics (rows).

Details

Situations are the columns (N=10) and characteristics (N=8) are the rows.

References

Rauthmann, J. F., Sherman, R. A., & Funder, D. C. (forthcoming). Foundations of situation perception: Towards a psychology of how people form impressions of situations. *European Journal of Personality*.

Examples

```
data(exsitu)
exsitu
```

get.ICC

Intra-class Correlations

Description

Calculates the 6 intra-class correlations for the columns in the matrix or data.frame *x*, where the columns are typically raters or items, following Shrout and Fleiss (1979).

Usage

```
get.ICC(x)
```

Arguments

x A matrix or data.frame on which to calculate ICCs of the columns.

Details

This function is the workhorse function for `item.ICC` and `Profile.ICC`. It computes the intra-class correlations for a single item and for the composite of the items in the data.frame or matrix *x*. Of note, the results should be interpreted with extreme caution if values in *x* are missing. If possible, the best choice is to remove missing values from *x* first.

Value

A matrix containing the values for the six possible intra-class correlations described by Shrout and Fleiss (1979).

Note

This function is the workhorse function for `item.ICC` and `Profile.ICC`. It is rarely used as a stand alone function.

Author(s)

Ryne A. Sherman

References

Shrout, P. E. & Fleiss, J. L. (1979). Intraclass correlations: Uses in assessing rater reliability. *Psychological Bulletin*, 86, 420-428

See Also

[item.ICC Profile.ICC](#)

Examples

```
y <- matrix(rnorm(200), ncol=2)
get.ICC(y)
```

horn

Horn's Parallel Analysis

Description

Conduct's Horn's (1965) parallel analysis for determining the number of principal components

Usage

```
horn(set, sims = 100, nomiss = 1, graph = TRUE)
```

Arguments

set	A data.frame containing the variables to be analyzed
sims	A numeric indicating the number simulated data sets to use
nomiss	A numeric from 0 to 1.00 indicating the percentage of data that must be valid (non-missing)
graph	A logical indicating whether the results should be displayed graphically or not

Details

Horn's (1965) method of determining the number of factors to extract uses bootstrap style resampling of the original data matrix to create a sample data matrix. The eigenvalues for this data matrix are then computed and stored. This process is repeated "sims" times and the average of the resulting eigenvalues is taken to indicate the vector of eigenvalues that would be expected by random data. Horn suggested that one should extract as many factors as have eigenvalues greater than the eigenvalues expected by random data.

Value

Prints the number of components suggested and the number of cases deleted due to missingness. If graph=T a Scree Plot is graphed.

Author(s)

Ryne A. Sherman

References

Horn, J. (1965) A rationale and test for the number of factors in factor analysis. *Psychometrika*, 30, 179-185.

See Also

[fa.parallel](#)

Examples

```
data(bfi.set) # the Big Five Personality Inventory
horn(bfi.set) #now we can see how many components are suggested
```

inner.outer

Comparing Within-set and Between-set Correlations

Description

Returns the average within-set correlation and average between-set correlation for a given list of sets of variables.

Usage

```
inner.outer(L)
```

Arguments

L The argument 'L' is a list of data.frames with each data.frame containing the the items

Details

When doing factor analysis, principal components analysis, or cluster analysis of items one might desire to know how well the items thought to belong to a factor, component, or cluster (or set) correlate amongst each other as opposed to items thought to belong to other factors, components, or clusters (sets). This function returns for each factor, componnet, or cluster its average "inner" correlation and its average "outer" correlation. For more information on logic of this strategy see Rosenthal and Rosnow (2008) under "Principal Components."

Value

Returns a data.frame with 2 rows indicating the average within-set (inner) correlation and average between-set (outer) correlation respectively. The number of columns is equal to length of "L" representing the results for each set.

Inner t	The average correlation amongst items in that set.
Outer r	The average correlation of items between sets.

Author(s)

Ryne A. Sherman

References

Rosenthal, R. & Rosnow, R. R. (2007). *Essentials of Behavioral Research: Methods and Data Analysis* (3rd ed.). New York: McGraw-Hill.

See Also

MTMM, ~~~

Examples

```
# We can generate some random data by first creating a population correlation matrix
sig <- matrix(c(1.00, .4, .6, .05, .1, -.05, .4, 1.00, .5, .08,
-.02, .03, .6, .5, 1.00, .09, .1, -.07, .05, .08, .09, 1.00, .6, .7, .1,
-.02, .1, .6, 1.00, .5, -.05, .03, -.07, .7, .5, 1.00), ncol=6, byrow=TRUE)
sig
library(mvtnorm)
# Now create random data based on this population matrix
d <- rmvnorm(100, sigma=sig)
#Create a list indicating the items belonging to each set
L <- list(d[,1:3], d[,4:6])
#Now use inner.outer on that list
inner.outer(L)
```

insitu

Internal Situation Ratings

Description

These are self-ratings of 10 situations (columns) actually experienced by participants (one rater per situation) on 8 characteristics (rows).

Usage

```
data(insitu)
```

Format

A matrix containing ratings of 10 situations (columns) on 8 characteristics (rows).

Details

Situations are the columns (N=10) and characteristics are the rows.

References

Rauthmann, J. F., Sherman, R. A., & Funder, D. C. (forthcoming). Foundations of situation perception: Towards a psychology of how people form impressions of situations. *European Journal of Personality*.

Examples

```
data(insitu)
insitu
```

ipsatize	<i>Ipsatize Data</i>
----------	----------------------

Description

Returns a data.frame after ipsatizing (standardizing the rows)

Usage

```
ipsatize(set)
```

Arguments

set A data.frame to be ipsatized

Details

In research it is frequently desired to standardize the rows of a data.frame rather than the columns. This function does just that.

Value

Returns a data.frame of the same dimensions as 'set' that contains ipsatized values

Author(s)

Ryne A. Sherman

See Also

[reQ](#)

Examples

```
data(bfi.set)
#Lets ipsatize (within-person standardize) the Big Five Inventory (BFI)
head(bfi.set)
ip.bfi.set <- ipsatize(bfi.set)
head(ip.bfi.set)
```

item.ICC

*Item Intra-class Correlations***Description**

Calculates the item (or rater) intra-class correlations for a single item and a composite of the items, following Shrout and Fleiss (1979), for the corresponding columns in each set provided to the function.

ICC1: Each target is rated by a different judge and the judges are selected at random. (This is a one-way ANOVA fixed effects model and is found by $(MSB - MSW)/(MSB + (nr-1)*MSW)$)

ICC2: A random sample of k judges rate each target. The measure is one of absolute agreement in the ratings. Found as $(MSB - MSE)/(MSB + (nr-1)*MSE + nr*(MSJ - MSE)/nc)$

ICC3: A fixed set of k judges rate each target. There is no generalization to a larger population of judges. $(MSB - MSE)/(MSB + (nr-1)*MSE)$

Then, for each of these cases, is reliability to be estimated for a single rating or for the average of k ratings? (The 1 rating case is equivalent to the average intercorrelation, the k rating case to the Spearman Brown adjusted reliability.)

ICC1 is sensitive to differences in means between raters and is a measure of absolute agreement.

ICC2 and ICC3 remove mean differences between judges, but are sensitive to interactions of raters by judges. The difference between ICC2 and ICC3 is whether raters are seen as fixed or random effects.

ICC1k, ICC2k, ICC3K reflect the means of k raters.

Usage

```
item.ICC(set1, set2, ..., omit = TRUE)
```

Arguments

set1	A data.frame or matrix with corresponding columns in set2 and any additional sets passed
set2	A data.frame or matrix with corresponding columns in set1 and any additional sets passed
...	Additional matrices or data.frames with corresponding columns to set1 and set2 passed
omit	omit A logical indicating whether incomplete cases should be omitted from analysis. If set to FALSE and data are missing, warning(s) will result.

Details

This function returns the ICCs for the corresponding columns from set1, set2, and each additional set to passed to the function where single item ICCs ($ICC[x,1]$) composite ICCs ($ICC[x,k]$) are computed for each group of corresponding columns in the sets. Follow Shrout and Fleiss (1979) for interpretation of the different ICCs.

Value

A data.frame containing the above described ICCs.

Author(s)

Ryne A. Sherman

References

Shrout, P. E. & Fleiss, J. L. (1979). Intraclass correlations: Uses in assessing rater reliability. *Psychological Bulletin*, 86, 420-428

See Also

[get.ICC Profile.ICC ICC](#)

Examples

```
data(acq1)
data(acq2)
#lets look at the item ICC between two acquaintance ratings of subjects' personality
#on 100 personality traits. Notice the columns of each data.frame are corresponding.
names(acq1)
names(acq2)
item.ICC(acq1, acq2)
# We can get the descriptives for these using describe() from the 'psych' package
describe(item.ICC(acq1, acq2))
```

item.resid

Item Level Residuals

Description

Returns the residuals of y.set after predicting the values from the corresponding columns in x.set.

Usage

```
item.resid(x.set, y.set, nomiss = 0.8)
```

Arguments

x.set	A data.frame or matrix, with the same dimensions as y.set, of which each column is a predictor of the corresponding column in y.set.
y.set	A data.frame or matrix, with the same dimensions as x.set, of which each column is to be predicted by the corresponding column in x.set.
nomiss	A numeric between .00 and 1.00 specifying the proportion of x-y pairs required to be complete before NA is returned instead of the regression coefficients. The default of .80 means that if more than 20 percent of the x-y pairs are incomplete an NA will be returned.

Details

Each column in x.set is used to predict its corresponding column in y.set and the residuals are returned.

Value

A data.frame with the same dimensions as y.set, containing the residual values on each item after predicting the item scores from the values in x.set.

Author(s)

Ryne A. Sherman

See Also

[lin.coef temp.resid Profile.reg](#)

Examples

```
data(caq)
data(RSPdata)
#Lets predict California Adult Q-Sort scores from extraversion scores
#and compute the residual scores on each CAQ item.
head(caq)
RSPdata$sEXT
dim(caq)
m.sEXT <- matrix(RSPdata$sEXT, nrow = 205, ncol = 100)
head(m.sEXT)
residuals <- item.resid(m.sEXT, caq)
head(residuals)
```

lensData

Self and External Coder Ratings of Situations

Description

This file contains data from 204 participants who rated their own situations using the RSQ. Those RSQ ratings were composited to form the 8 DIAMONDS situation characteristics. These situations were later rated on the same dimensions by external raters and then coded for a number of situation cues.

Usage

```
data(lensData)
```

Format

A data.frame with 205 observations containing

SID A participant ID number

Sex The participant's sex

family Was with one or more family members

mate Was with mate or spouse

friend Was with one or more friends

roomatesneighbor Was with a roommate or a neighbor

group Was with one or more colleagues/classmates, a group, or a team

alone Was alone

sports Sports were present

exam Was taken an exam, test, midterm, or final

cooking Someone was cooking

eating Someone was eating

social People were socializing, talking, communicating, or hanging out

movietv There was a movie or TV

travel Situation involved travel (e.g., a car, driving)

computer Situaition involed computers or the internet

videogames Situation involved video game playing or watching

readingbook Was reading a book

working Involved working, learning, or getting things done

shopping Involved shopping, buying, ordering, or paying for something

grooming Involved grooming or getting ready for something

waiting Involved waiting for someone or something

sleep Involved sleeping, resting, or napping

musicdance Involved music or dancing

telephone Involved using the telephone

home Was in one's home, own room, or house

bathroom Was in the bathroom

kitchen Was in the kitchen

bed Was in one's bed

school Was at school, a university, a library, or laboratory

cafe Was at a bar, restaurant, or cafe

duty Self-rated Duty composite score

intellect Self-rated Intellect composite score

adversity Self-rated Adversity composite score

mating Self-rated Mating composite score

positivity Self-rated Positivity composite score
 negativity Self-rated Negativity composite score
 deception Self-rated Deception composite score
 sociality Self-rated Sociality composite score
 dutyRater Self-rated Duty composite score
 intellectRater Coder-rated Intellect composite score
 adversityRater Coder-rated Adversity composite score
 matingRater Coder-rated Mating composite score
 positivityRater Coder-rated Positivity composite score
 negativityRater Coder-rated Negativity composite score
 deceptionRater Coder-rated Deception composite score
 socialityRater Coder-rated Sociality composite score

Details

This file contains data from 204 participants who rated their own situations using the RSQ. Those RSQ ratings were composited to form the 8 DIAMONDS situation characteristics. Those are duty, intellect, adversity, mating, positivity, negativity, deception, and sociality. Later, an external set of raters (4 each) read the situations as described the participants and rated them on the RSQ. These external ratings were averaged and 8 DIAMONDS composites were formed. Finally, the situation descriptions were read and coded for the presence (1) vs. absence (0) of 39 situation cues (e.g., with family vs not).

References

Rauthmann, J. F., Gallardo-Pujol, D., Guillaume, E. M., Todd, E., Nave, C. S., Sherman, R. A., Ziegler, M., Jones, A. B., & Funder, D. C. (2014). The situational eight DIAMONDS: A taxonomy of major dimensions of situation characteristics. *Journal of Personality and Social Psychology*, 107(4), 677-718.

Examples

```
data(lensData)
head(lensData)
```

 lensDetect

Signal Detection Analyses for Lens Model Output

Description

A function for computing signal detection statistics from an object of class `LensMod`.

Usage

```
lensDetect(x, crit)
```


Arguments

x	An object of class LensMod.
crit	A critical p-value for the validity and utilization coefficients to be deemed to be "valid" and "utilized" for the purposes of the signal detection analysis. Those cues with p-values less than crit will be deemed valid.

Details

A data.frame containing the Signal Detection outputs (see Fielding & Bell, 1997).

Value

A data.frame containing the Signal Detection outputs (see Fielding & Bell, 1997).

Author(s)

Ryne A. Sherman

References

Fielding, A. H., & Bell, J. F. (1997). A review of methods for assessment of prediction errors in conservation presence/absence models. *Environmental Conservation*, 24(1), 38-49.

See Also

[lensModel print.lensMod](#)

Examples

```
data(lensData)
DIAMONDS.in <- lensData[,32:39] # Self-ratings on 8 Situation Characteristics
DIAMONDS.ex <- lensData[,40:47] # Coder-ratings on 8 Situation Characteristics
CUES <- lensData[,3:31] # Coded Situation Cues

mod <- lensModel(DIAMONDS.in, DIAMONDS.ex, CUES) # Get the lens statistics
lensDetect(mod)
```

lensModel

Lens Model Regressions

Description

A function for computing key statistics from a Lens Model (Brunswick, 1952) analysis.

Usage

```
lensModel(inSet, exSet, cueSet)
```

Arguments

inSet	A data.frame containing the variables on the validity side of the lens model. It must have the same dimensions as exSet and columns corresponding to the columns in exSet.
exSet	A data.frame containing the variables on the utilization side of the lens model. It must have the same dimensions as inSet and columns corresponding to the columns in inSet.
cueSet	A data.frame containing the cues to use in the lens analysis.

Details

This function is designed to perform so-called Lens Model analyses. If a set of targets has known criterion values on some dimensions (e.g., self-reports of personality) a set of judges may make judgments of those targets (e.g., other reports of personality) based on some information (i.e., Cues) presented to the judges (e.g., some behavioral acts). A lens model analyses examines (a) the achievement of the judges (i.e., accuracy) for each dimension being judged as the correlation between the judgments and the criterion, (b) the validities of the cues for each dimension as the linear regression coefficients predicting the criterion from all of the cues, and (c) the cue utilization of the judges for each dimension as the linear regression coefficients predicting the judgments from the cues. This function computes all of this and much more in one step.

Value

Returns a list containing the following

Lens Stats	A data.frame containing the following statistics for each variable in inSet: <ol style="list-style-type: none"> 1. Validity SaturationThe multiple R for the Validity side of the Lens Model 2. Utilization SaturationThe multiple R for the Utilization side of the Lens Model 3. Coefficient CorrelationThe correlation between the Cue Validities and the Cue Utilizations (not including the intercept) 4. AchievementThe correlation between inSet and exSet 5. Linear KnowledgeThe correlation between the fitted values from the validity and utilization sides of the model 6. Unmodeled KnowledgeThe correlation between the residuals from the validity and utilization sides of the model
Cue Validities	A data.frame of size $\text{ncol}(\text{cueSet})+1 \times \text{ncol}(\text{inSet})$ containing the regression coefficients (including intercept) for the validity side of the lens model.
Cue Utilizations	A data.frame of size $\text{ncol}(\text{cueSet})+1 \times \text{ncol}(\text{exSet})$ containing the regression coefficients (including intercept) for the utilization side of the lens model.

Author(s)

Ryne A. Sherman

References

Brunswik, E. (1952). The conceptual framework of psychology. Chicago: University of Chicago Press

See Also

[lensDetect print.lensMod](#)

Examples

```
data(lensData)
DIAMONDS.in <- lensData[,32:39] # Self-ratings on 8 Situation Characteristics
DIAMONDS.ex <- lensData[,40:47] # Coder-ratings on 8 Situation Characteristics
CUES <- lensData[,3:31] # Coded Situation Cues

mod <- lensModel(DIAMONDS.in, DIAMONDS.ex, CUES) # Get the lens statistics
mod$'Lens Stats' # View the overall stats
print(mod) # View the individual coefficients and p-values
```

 lin.coef

Linear Coefficients

Description

Returns the slope and intercept for x predicting y

Usage

```
lin.coef(x, y, out = "both", nomiss = 0.8)
```

Arguments

x	A numeric vector of the same length as y
y	A numeric vector of the same length as x
out	A character vector specifying whether the result should return just the intercept ("int"), just the slope ("slope") or both ("both") which defaults to "both"
nomiss	A numeric between .00 and 1.00 specifying the proportion of x-y pairs required to be complete before NA is returned instead of the regression coefficients. The default of .80 means that if more than 20 percent of the x-y pairs are incomplete an NA will be returned.

Details

This function is largely designed to increase computation efficiency for getting regression coefficients. For instance, this function is called by the Profile.reg function (see Profile.reg).

Value

b0 intercept of the regression line from y predicted from x
 b1 slope of the regression line from y predicted from x

Author(s)

Ryne A. Sherman

See Also

[Profile.reg](#)

Examples

```
data(RSPdata)
# Lets predict self reported extraversion from gender
lin.coef(RSPdata$ssex,RSPdata$sEXT)
# confirm that these numbers match the results from lm()
lm(sEXT ~ ssex, data = RSPdata)
```

meanif

Mean

Description

Returns the mean of a vector, matrix, or data.frame if it has nomiss proportion of valid cases

Usage

```
meanif(set, nomiss = 0.8, tr = 0)
```

Arguments

set A vector, matrix, or data.frame
 nomiss A numeric vector specifying the proportion of valid cases in set (i.e. data that must not be NA) for the mean to be returned
 tr A numeric specifying the amount of trimming if desired

Details

The built in r function mean includes an na.rm argument that allows the computation of a mean excluding missing cases. However, sometimes one wants to calculate the mean of an object so long as some proportion of those cases are present. The nomiss option of this function allows this capability. If fewer than the nomiss proportion of the cases are invalid (i.e. missing) the function will return NA. Otherwise, it will return the mean of the valid cases.

Value

Returns the mean.

Author(s)

Ryne A Sherman

See Also

[mean](#)

Examples

```
data(RSPdata)
RSPdata$sEXT #no missing values
meanif(RSPdata$sEXT,nomiss=1)
RSPdata$sEXT[100] <- NA #now we make one value missing
meanif(RSPdata$sEXT,nomiss=1) #returns NA
meanif(RSPdata$sEXT,nomiss=.8) #returns value
```

MTMM

Multi Trait Multi Method Matrix

Description

Returns the summary results from a multi-trait multi-method correlation matrix including the average correlations for Same Trait-Different Method, Same Method-Different Trait, and Different Method-Different Trait.

Usage

```
MTMM(x, traits, methods)
```

Arguments

x	A data.frame organized such that each column represents the ratings for each Trait-Method combination. The columns must be ordered in sets such that the first set is the first trait rated by each method, followed by the second trait rated by each method (in the same order), and so on.
traits	An integer indicating the total number of different traits rated.
methods	An integer indicating the total number of methods used.

Details

Multi-trait Multi-method matrices are often used to examine the validity of the construct(s) under investigation. That is, if different methods agree about a target's standing on a trait, it is more likely that the trait itself is valid. However, such agreement must be compared with agreement about different targets using the same method (method effects), which must in turn be compared with agreement about different targets using different methods (i.e., the general similarity of targets). This function returns all three such values: The average agreement about targets on the given traits using different methods, the average agreement about different targets using the same methods (method effects), and the average agreement about different targets using different methods (baseline agreement).

Value

SameTrait	The average correlation for the Same Traits rated by Different Methods
SameMethod	The average correlation for the Same Methods used to rate the Different Traits
DiffDiff	The average correlation for the Different Traits rated by Different Methods

Author(s)

Ryne A. Sherman

See Also

[inner.outer](#)

Examples

```
# We can generate some random data by first creating a population correlation matrix
sig <- matrix(c(1.00,.4,.6,.05,.1,-.05,.4,1.00,.5,.08,
-.02,.03,.6,.5,1.00,.09,.1,-.07,.05,.08,.09,1.00,.6,.7,.1,-.02,.1,.6,
1.00,.5,-.05,.03,-.07,.7,.5,1.00), ncol=6, byrow=TRUE)
sig
library(mvtnorm)
# Now create random data based on this population matrix
d <- rmvnorm(100, sigma=sig)
#Now use MTMM on this data.frame indicating that there are 2 traits and 3 methods.
MTMM(d, 2, 3)
```

Description

1) Calculates the width of a confidence interval for the correlation coefficient r given the sample size (N) and the alpha level. 2) Calculates the sample size required to obtain a confidence interval for the correlation coefficient r of a desired width (CIwidth) given alpha. 3) Calculates the alpha for a confidence interval for r given desired confidence interval width (CIwidth) and the sample size (N).

Usage

```
n4rci(CIwidth = NULL, N = NULL, alpha = NULL)
```

Arguments

CIwidth	A numeric between 0 and 1.00 indicating desired confidence interval width.
N	A numeric element greater than 3 indicating the desired sample size.
alpha	A numeric element between 0 and 1.00 indicating the desired alpha (Type-I error rate) level.

Details

Given two of the three arguments, calculates the result of the third. Is probably most useful for determining the sample size one needs to obtain a desired confidence interval. Note that when operated in this mode the result is not always a whole number (i.e., partial Ns are returned). Rounding up is recommended. Is second most useful for calculating the width of one's confidence interval given the sample size. Is third (least) useful for calculating alpha.

Value

No matter which mode is used, the N, the CI Width and the alpha are returned.

Author(s)

Ryne A. Sherman

Examples

```
n4rci(CIwidth=.15, N=NULL, alpha=.05) #finding the necessary N
n4rci(CIwidth=NULL, N=200, alpha=.05) #finding the CI width
n4rci(CIwidth=.3, N=120, alpha=NULL) #finding the alpha
```

opt.temp

Optimum Template

Description

This is a CAQ Template for an optimally adjusted person

Usage

```
data(opt.temp)
```

Format

Opt.temp contains scores from 1 to 9 on each of 100 [caq.items](#) for an optimally adjusted person.

Details

A CAQ description of the Optimally Adjusted Person based on 9 independent clinician ratings. The average profile agreement amongst the ratings was $r = .78$, implying a spearman-brown reliability of .97.

References

Block, J. (1961). *The Q-Sort Method in Personality Assessment and Psychiatric Research*. Springfield, IL: Charles C. Thomas.

Examples

```
data(opt.temp)
opt.temp
```

partwhole	<i>Part-Whole Correlation</i>
-----------	-------------------------------

Description

Returns the part-whole correlations between an item or the mean of all possible groups of nitens and the composite of the full set of items.

Usage

```
partwhole(x, nitens = 1, nomiss = 0.8)
```

Arguments

x	A matrix or data.frame containing the variables (in columns) thought to form a composite.
nitens	A numeric element indicating the number of items desired for each possible group of items.
nomiss	A numeric between .00 and 1.00 indicating the proportion of scores that must be non-missing for each composite before a score of NA is returned.

Details

The purpose of this function is to determine which subset of items, when formed into a unit-weighted composite, most strongly correlate with both a unit-weighted and a components weighted composite of the full set of items. For example, if one has an 8 item scale and wants to reduce it to a 4 item scale, it might be interest to know which 4 items can be composited and correlate most highly with the composite from the full set of 8 items. It turns out there are 70 ways to form 4-item composites from 8 total items. This function creates all 70 of those composites and correlates each with both a unit weighted composite from the original 8 items and a components scored (1 principal component) composite of the original 8 items. One can then look at the output to determine which 4-item composite best correlated with the full scale composite.

Value

A matrix with 2 rows and K columns where K is the number of possible subset combinations. The column names indicate which items (separated by an underline) make up the subset combination. The first row (UnitWgt) is the result using a unit weighted composite for the total set of items and the second row (Component) is the result using principle component scores for the total set of items.

Author(s)

Ryne A. Sherman

See Also

[composite](#)

Examples

```
data(bfi.set)
# Imagine we want to find the best two-item composite that correlates
# highest with the full 8 items available to measure extraversion.
# Three (of the extraversion) items need to be reverse scored
sBFI6r <- 6 - bfi.set$sBFI6
sBFI21r <- 6 - bfi.set$sBFI21
sBFI31r <- 6 - bfi.set$sBFI31
# Now put them all into one data.frame
ext.vars <- data.frame(bfi.set$sBFI1, sBFI6r, bfi.set$sBFI11,
bfi.set$sBFI16, sBFI21r, bfi.set$sBFI26, sBFI31r, bfi.set$sBFI36)
head(ext.vars) # Looks good
# Now compute the parwhole correlation for all possible 2-item composites
parwhole(ext.vars, 2)
```

plotProfile

Visualizing Profiles of Scores

Description

A function for plotting entire profiles of scores for individual observations (e.g., personality profiles)

Usage

```
plotProfile(dat, rows = NULL, col = "black", grid = TRUE, grid.col = "lightgray",
grid.lty = "dotted", item.names = NULL, ...)
```

Arguments

dat	A data.frame containing the profiles to be plotted.
rows	A numeric vector indicating the desired rows in dat to be plotted. If left NULL, then all rows in dat will be plotted.

<code>col</code>	A character vector indicating the colors for the lines. One color for each row should be provided.
<code>grid</code>	A logical indicating if a vertical grid on the x-axis tick marks should be drawn.
<code>grid.col</code>	A character element indicating the color of grid.
<code>grid.lty</code>	A character element indicating the line type of grid.
<code>item.names</code>	A character vector indicating the names for the items. If left NULL, the names provided in <code>dat</code> will be used.
<code>...</code>	Other graphical arguments passed to the <code>plot()</code> function.

Details

This function plots the profile of scores across all of the variables (constructs) in `dat`. This is useful for quickly spotting similarity and differences in profiles for two or more observations.

Author(s)

Ryne A. Sherman

See Also

[scoreTest](#) [meanif](#) [scoreItems](#)

Examples

```
data(bfi)
keys.list <- list("agree"=c(-1,2,3,4,5),
  "conscientious"=c(6,7,8,-9,-10),"extraversion"=c(-11,-12,13,14,15),
  "neuroticism"=c(16,17,18,19,20),"openness"=c(21,-22,23,24,-25))
out <- scoreTest(bfi, keys.list, nomiss=0, maxScore=6, minScore=1)
plotProfile(out, rows=1:3, xlab="", ylab="Score", col=c("red", "blue", "green"),
  main="Big 5 Profiles for Three Subjects", ylim=c(1,6), item.names=names(out))
legend("bottomleft", legend=rownames(bfi)[1:3], lty=1, col=c("red", "blue", "green"), bty="n")
```

popsd

Population Standard Deviation

Description

Returns the population standard deviation of `x`

Usage

```
popsd(x, nomiss = 0.8)
```

Arguments

x	A numeric vector
nomiss	A numeric between .00 and 1.00 specifying the proportion of valid cases in x (i.e. data that must not be NA) for the sd to be returned

Details

R's built-in sd function divides the sum of the squared deviations from the mean by the number of observations minus 1 (N-1). However, there are times where one would prefer to use the formula with N in the denominator (e.g. if one is working with the entire population of scores). This function does just that.

Value

This function returns the population standard deviation.

Author(s)

Ryne A. Sherman

See Also

[sd](#)

Examples

```
x <- rnorm(100, mean = 12, sd = 10)
sd(x) #sample standard deviation
popstd(x) #population standard deviation
```

print.lensMod

Printing Lens Model Output

Description

A function for succinctly organizing output from the [lensModel](#) function.

Usage

```
## S3 method for class 'lensMod'
print(x, rnd.coef = 2, rnd.p = 3, ...)
```

Arguments

x	A object of class LensMod to be printed
rnd.coef	A numeric indicating the number of digits to round the coefficients
rnd.p	A numeric indicating the number of digits to round the p-values
...	More arguments to pass to the print function.

Details

A print function for the [lensModel](#) function that makes the output easier to interpret.

Author(s)

Ryne A. Sherman

See Also

[lensModel](#)

Examples

```
data(lensData)
DIAMONDS.in <- lensData[,32:39] # Self-ratings on 8 Situation Characteristics
DIAMONDS.ex <- lensData[,40:47] # Coder-ratings on 8 Situation Characteristics
CUES <- lensData[,3:31]       # Coded Situation Cues

mod <- lensModel(DIAMONDS.in, DIAMONDS.ex, CUES) # Get the lens statistics
print(mod)
```

print.q.cor

Print q.cor object

Description

Prints the results of a q.cor object in a more interpretable fashion. Also includes a convenient export option.

Usage

```
## S3 method for class 'q.cor'
print(x, var.content = NULL,
      initial = NULL, rnd = 2, EXPORT = FALSE, short = FALSE, ...)
```

Arguments

x	An object returned by the q.cor() function.
var.content	An optional vector containing the content of the items or variables used as the "set" in a q.cor analysis. If left NULL default content is created.
initial	An optional character element indicating the initial letters for the item codes or names in set. If left NULL "i" is used.
rnd	A numeric element specifying the number of places to round each correlation coefficient.

EXPORT	A file location to export the print results. If FALSE (default) no exportation is done.
short	A logical indicating whether long output (default) or short output is to be returned.
...	More arguments to pass to the print function.

Details

A print function for the [q.cor](#) function used to summarize the results of a `q.cor` object. This function easily adds the content of the items to the correlation table, sorts the correlation table, and allows the user to limit the table to only those items that are statistically significant at the $p < .10$ for the combined or $.05$ level for each gender by setting the `short` option = TRUE. In addition, the `export` option allows the user to output the results (either long or short) into a `.csv` file.

Author(s)

Ryne A. Sherman

See Also

[q.cor](#)

Examples

```
data(rbqv3.items)
data(RSPdata)
data(v2rbq)
names(v2rbq)
q.obj <- q.cor(RSPdata$sEXT, v2rbq, sex = RSPdata$ssex, fem = 1, male = 2, sims = 1000)
#It might be necessary to adjust size of the width of your console to make this content fit.
print(q.obj) # Accepting only the default arguments
# Taking advantage of the other arguments
print(q.obj, var.content = rbqv3.items, initial = "RBQ", short = TRUE, EXPORT = FALSE)
```

Profile.ICC

Profile Intra-class Correlation

Description

Calculates the Profile intra-class correlations for a single profile (row) and a composite of the profiles (rows), following Shrout and Fleiss (1979), for the corresponding rows in each set provided to the function.

ICC1: Each target is rated by a different judge and the judges are selected at random. (This is a one-way ANOVA fixed effects model and is found by $(MSB - MSW)/(MSB + (nr-1)*MSW)$)

ICC2: A random sample of k judges rate each target. The measure is one of absolute agreement in the ratings. Found as $(MSB - MSE)/(MSB + (nr-1)*MSE + nr*(MSJ-MSE)/nc)$

ICC3: A fixed set of k judges rate each target. There is no generalization to a larger population of judges. $(MSB - MSE)/(MSB + (nr-1)*MSE)$

Then, for each of these cases, is reliability to be estimated for a single rating or for the average of k ratings? (The 1 rating case is equivalent to the average intercorrelation, the k rating case to the Spearman Brown adjusted reliability.)

ICC1 is sensitive to differences in means between raters and is a measure of absolute agreement.

ICC2 and ICC3 remove mean differences between judges, but are sensitive to interactions of raters by judges. The difference between ICC2 and ICC3 is whether raters are seen as fixed or random effects.

ICC1k, ICC2k, ICC3K reflect the means of k raters.

Usage

```
Profile.ICC(set1, set2, ..., omit = TRUE)
```

Arguments

set1	A data.frame or matrix with corresponding rows in set2 and any additional sets passed to the function.
set2	A data.frame or matrix with corresponding rows in set1 and any additional sets passed to the function.
...	Additional matrices or data.frames with corresponding rows to set1 and set2 passed to the function.
omit	A logical indicating whether incomplete cases should be omitted from analysis. If set to FALSE and data are missing, warning(s) will result.

Details

This function returns the ICCs for the corresponding rows from set1, set2, and each additional set to be passed to the function where single Profile ICCs ($ICC[x,1]$) and composite ICCs ($ICC[x,k]$) are computed for each group of corresponding rows in the sets. Follow Shrout and Fleiss (1979) for interpretation of the different ICCs.

Value

A data.frame containing the above described ICCs.

Author(s)

Ryne A. Sherman

References

Shrout, P. E. & Fleiss, J. L. (1979). Intraclass correlations: Uses in assessing rater reliability. *Psychological Bulletin*, 86, 420-428

See Also

[get.ICC](#) [item.ICC](#)

Examples

```
data(acq1)
data(acq2)
#lets look at the Profile ICC between two acquaintance ratings of subjects' personality
names(acq1)
names(acq2)
Profile.ICC(acq1, acq2)
#We can get the descriptives for these using describe() from the 'psych' package
describe(Profile.ICC(acq1, acq2))
```

 Profile.norm

Normativeness

Description

Computes a number of "normativeness" statistics for a given matrix or data.frame

Usage

```
Profile.norm(set, nomiss = 0.8, center = "grand", std = FALSE)
```

Arguments

set	A data.frame or matrix.
nomiss	A numeric between .00 and 1.00 specifying the proportion of x-y pairs required to be complete before NA is returned instead of the regression coefficients. The default of .80 means that if more than 20 percent of the x-y pairs are incomplete an NA will be returned.
center	A character vector specifying the type of centering to be done. If "group" is used then each column in set is centered on its own column mean. If "grand" (default) is used then each column in set is centered on the mean of all data in set. If "none" is used then no centering is done.
std	A logical vector indicating whether variables should be standardized prior to analysis. The default option (FALSE) does no standardizing. Using TRUE standardizes the variables set with centering determined by the center="option".

Details

This function is largely based on Furr's (2008) discussion of normativeness. For a given data.frame or matrix ("set"), this function computes 1) the mean of all variables (columns) in the set; 2) a jackknifed mean for each row, which is the mean of all variables in the set with its own row's data removed; 3) the correlations with normativeness which are the Profile correlations for the data in the rows of set with the jackknifed mean; 4) the regression coefficients with normativeness which are the jackknifed means predicting their own row; and 5) the residuals for the jackknifed means predicting their own own row. Following Furr (2008) the correlation and regression coefficients can be used as measures of "normativeness" for each row's Profile and the residuals can be used as a measure of "distinctiveness" for each row's Profile.

Value

Means	The means of the columns in set after removing missing values.
JackMeans	A matrix, with the same dimensions as set, of means of set after removing the values in the given row.
Cors	The correlations between each row in set with it's jackknifed mean.
Regs	The regression coefficients (intercept and slope) for each row in set as predicted by it's jackknifed mean.
Residuals	A matrix, with the same dimensions as set, containing the residuals from predicting the rows in set from the jackknifed means.

Author(s)

Ryne A. Sherman

References

Furr, R. M. (2008). A framework for Profile similarity: Integrating similarity, normativeness, and distinctiveness. *Journal of Personality*, 75(5), 1267-1316.

See Also

[Profile.r](#) [Profile.reg](#) [Profile.resid](#)

Examples

```
data(caq)
caq.norm <- Profile.norm(caq)
str(caq.norm)
# The Mean CAQ profile
caq.norm$Means
# The Jackknifed Mean Profiles (the mean profile with its own case removed)
head(caq.norm$JackMeans)
# The profile correlations between my own CAQ and the Jackknifed Mean profile
caq.norm$Cors
# The regression coefficients between my own CAQ profile and the Jackknifed Mean profile
caq.norm$Regs
# The residuals after predicting my own CAQ profile with my Jackknifed Mean profile
```



```
head(caq.norm$Residuals)
```

 Profile.r

Profile Correlations

Description

Computes overall and distinctive profile correlations for each observation (row) with item pairs making up the columns in x.set and y.set.

Usage

```
Profile.r(x.set, y.set, nomiss = 1, distinct = FALSE, alt = "greater")
```

Arguments

x.set	A data.frame or matrix of the first set of variables with columns corresponding to y.set
y.set	A data.frame or matrix of the second set of variables with columns corresponding to x.set
nomiss	A numeric between .00 and 1.00 specifying the proportion of x-y pairs required to be complete before NA is returned instead of the profile correlation. The default of 1.00 means that if any values are missing an NA will be returned
distinct	A logical indicating whether distinctive profile correlations (agreement) between x.set and y.set should be computed.
alt	A character string specifying the alternative hypothesis for tests of overall and distinctive agreement against baseline values. Must be one of "greater" (default), "less" or "two-sided".

Details

When distinct is set to its default FALSE: For each observational unit a correlation between its x.set and y.set of variables is returned. If the observational unit has less than "nomiss" pairs with missing data the function returns NA as the unit's result When distinct is set to TRUE: The function does the same analysis a when distinct is set to false, but it provides a number of additional results. Following Furr's (2008) discussion of distinctiveness and normativeness, when distinct is set to TRUE the normative (average) Profile of x.set and y.set is computed. These normative Profiles are then used to predict each Profile in their respective set (i.e., the average Profile of x.set is used to predict each Profile (row) in x.set) using linear regression and the residuals for each set are retained. The correlation between the two normative Profiles is computed and returned. Finally, for each observational unit the correlation between the residualized x.set and the residualized y.set are computed and returned. If the unit has less than "nomiss" pairs with missing data the functions returns NA as the unit's result.

Value

xNorm	The average (with missing values removed) Profile for x.set.
yNorm	The average (with missing values removed) Profile for y.set.
Norm.r	The correlation between the average x.set and average y.set Profiles.
Agreement	A data.frame containing the overall and distinctive Profile correlations.
Overall	The column containing the overall Profile agreements. These are the same values as returned by the function when <code>distinct==FALSE</code> .
Distinctive	The column containing the distinctive Profile agreements.
Test	A data.frame containing the sample sizes, average Profile agreements, baseline Profile agreements, t-tests against the baseline, and p-values for both Overall and Distinctive Profile correlations.

Note

Furr's (2008) discussion of distinctiveness uses difference scores rather than the regression approach used by this function, but the conceptual idea surrounding "distinctiveness" is similar.

Author(s)

Ryne A. Sherman

References

Furr, R. M. (2008). A framework for Profile similarity: Integrating similarity, normativeness, and distinctiveness. *Journal of Personality*, 76(5), 1267-1316.

See Also

[Profile.reg](#) [temp.match](#) [temp.resid](#) [t.test](#)

Examples

```
data(acq1)
data(caq)
#Lets look at Profile correlations between self-report California Adult Q-Sort
#ratings of personality and Acquaintance ratings of the same person.
head(acq1)
head(caq)
Profile.r(caq, acq1) # The basic Profile agreements
describe.r(Profile.r(caq, acq1)) # Descriptive Statistics for the Agreements
# Now let's look at both overall and distinctive agreement
myres <- Profile.r(caq, acq1, distinct = TRUE)
myres
describe.r(myres$Agreement) # The average overall and distinctive agreements
```

 Profile.r.rep *Profile Correlation Replicability*

Description

Computes the replicability of both overall and distinctive Profile correlations.

Usage

```
Profile.r.rep(x.set, y.set, nomiss = 1, CI = 0.95, CItype = "xci")
```

Arguments

x.set	A data.frame or matrix of the same dimensions as y.set with rows corresponding to the rows in y.set
y.set	A data.frame or matrix of the same dimensions as x.set with rows corresponding to the rows in x.set
nomiss	A numeric between .00 and 1.00 indicating the proportion of pairs of scores that must be valid for a result to be computed.
CI	A numeric between .00 and 1.00 indicating the desired confidence level.
CItype	A character element of either "xci" or "aci" specifying the the type of confidence interval to compute based on Koning & Franses (2003).

Details

Sherman and Wood (in press) describe a method for computing the replicability of a vector of correlation coefficients (see vector.alpha). They also discuss how this may be applied to profile correlations. This function applies the strategy outlined by Sherman and Wood (in press) and used by the vector.alpha function to profile correlations. The results include the replicability point estimate for both the overall profile correlations between x.set and y.set as well as the distinctive profile correlations. Confidence intervals are computed based on Koning and Frances' (2003) methods, choosing either asymptotic ("aci") or exact ("xci").

Value

A matrix containing the replicability point estimate and its confidence intervals.

Overall	Replicability of Overall correlations between x.set and y.set
Distinctive	Replicability of Distinctive correlations between x.set and y.set

Author(s)

Ryne A. Sherman

References

Sherman, R. A. & Wood, D. (in press). Estimating the expected replicability of a pattern of correlations and other measures of association. *Multivariate Behavioral Research*.

See Also

[Profile.r vector.alpha](#)

Examples

```
data(acq1)
data(caq)
#Lets look at Profile correlations between self-report California Adult Q-Sort
#ratings of personality and Acquaintance #ratings
names(acq1)
names(caq)
# The basic Profile agreements
Profile.r(caq, acq1)
# Both overall and distinctive agreements
Profile.r(caq, acq1, distinct = TRUE)$Agreement
# How replicable (reliable) are those agreement patterns?
Profile.r.rep(caq, acq1)
```

Profile.reg

Profile Regression Coefficients

Description

Returns the regression coefficients for each observation (row) with item pairs making up the columns in `x.set` and `y.set`.

Usage

```
Profile.reg(x.set, y.set, center = "group", std = FALSE, nomiss = 0.8)
```

Arguments

<code>x.set</code>	A data.frame or matrix, with the same dimensions as <code>y.set</code> , of which each row is a predictor of the corresponding row in <code>y.set</code> .
<code>y.set</code>	A data.frame or matrix, with the same dimensions as <code>x.set</code> , of which each row is to be predicted by the corresponding row in <code>x.set</code> .
<code>center</code>	A character string specifying the type of centering to be done. If "group" (default) is used then each column in <code>x.set</code> is centered on its own column mean. If "grand" is used then each column in <code>x.set</code> is centered on the mean of all data in <code>x.set</code> . If "none" is used then no centering is done.

std	A logical vector indicating whether variables should be standardized prior to analysis. The default option (FALSE) does no standardizing. Using TRUE standardizes both the variables in x.set and y.set with centering determined by the center="option".
nomiss	A numeric between .00 and 1.00 specifying the proportion of x-y pairs required to be complete before NA is returned instead of the regression coefficients. The default of .80 means that if more than 20 percent of the x-y pairs are incomplete an NA will be returned.

Details

For each observational unit, the regression coefficients (slope and intercept) between its variables in x.set and y.set are returned. If fewer than 'nomiss' of the x-y pairs of observations are valid (complete) then NA will be returned for both coefficients.

Value

Returns a data.frame with 2 columns

Intercepts	Regression Intercepts
Slopes	Regression Slopes

Author(s)

Ryne A. Sherman

See Also

[Profile.r](#) [temp.match](#) [lin.coef](#)

Examples

```
data(acq1)
data(caq)
#Lets get the regression coefficients for
#predicting acquaintance California Adult Q-Set (CAQ)
#personality ratings from #self-report CAQ ratings
Profile.reg(caq, acq1)
# Get descriptives for the results
describe(Profile.reg(caq, acq1))
```

Profile.resid	<i>Residuals</i>
---------------	------------------

Description

Computes the residuals for each observation (row) where items pairs are the corresponding columns in x.set and y.set.

Usage

```
Profile.resid(x.set, y.set, nomiss = 0.8)
```

Arguments

x.set	A data.frame or matrix, with the same dimensions as y.set, of which each row is a predictor of the corresponding row in y.set.
y.set	A data.frame or matrix, with the same dimensions as x.set, of which each row is to be predicted by the corresponding row in x.set.
nomiss	A numeric between .00 and 1.00 specifying the proportion of x-y pairs required to be complete before NA is returned instead of the regression coefficients. The default of .80 means that if more than 20 percent of the x-y pairs are incomplete an NA will be returned.

Details

The residuals from predicting the values in each row of y.set from the values in the corresponding row of x.set are returned. If fewer than 'nomiss' of the x-y pairs of observations for a given row are valid (complete) then NA will be returned for all of that row's residuals.

Value

Returns a data.frame of the same size as x.set containing the residual values of y.set after being predicted by x.set.

Author(s)

Ryne A. Sherman

See Also

[Profile.reg lin.coef](#)

Examples

```

data(acq1)
data(caq)
#Lets get the regression coefficients for predicting acquaintance
#California Adult Q-Set (CAQ) personality ratings from #self-report CAQ ratings
Profile.reg(caq,acq1)
#We can look at the residuals from those regressions
res.acq <- Profile.resid(acq1, caq)
head(res.acq)

```

q.cor

Q Correlations

Description

Computes correlations, along with randomization tests (see `rand.test`), between a variable of interest (`x`) and a set of other variables (`set`), and repeats this for each sex.

Usage

```
q.cor(x, set, sex, fem = 1, male = 2, tails = 2, sims = 1000, seed = 2)
```

Arguments

<code>x</code>	A numeric vector of the same length as <code>nrow(set)</code> to be correlated with <code>set</code> .
<code>set</code>	A matrix or <code>data.frame</code> with <code>nrow</code> the same as <code>length(x)</code> to be correlated with <code>x</code> .
<code>sex</code>	A variable specifying the sex variable in the dataset from which <code>x</code> and <code>set</code> come.
<code>fem</code>	An element specifying the code for females in the sex variable.
<code>male</code>	An element specifying the code for males in the sex variable.
<code>tails</code>	An integer of either 1 or 2 specifying the tails for the p-values for the correlations.
<code>sims</code>	The number of randomizations passed to the <code>rand.test()</code> function.
<code>seed</code>	The seed passed to the <code>rand.test</code> function.

Details

A convenience function for quickly examining the pattern of correlations between a variable of interest "`x`" and a set of other variables "`set`".

Value

A list of class q.cor containing...

N	The Ns (using complete cases) for the total sample as well as female and male subsamples.
corrs	The pattern of correlations between 'x' and 'set' for the combined sample, females, and males ordered by the items in set.
sorted	The pattern of correlations between 'x' and 'set' for the combined sample, females, and males ordered by the magnitude of the correlations in the combined sample.
vector.cor	The correlation between the female and male patterns of correlations.

Note

Use [print](#) to quickly summarize the output of a q.cor object.

Author(s)

Ryne A. Sherman

See Also

[print.q.cor](#) [rand.test](#)

Examples

```
data(RSPdata)
data(v2rbq)
names(v2rbq)
q.obj <- q.cor(RSPdata$sEXT, v2rbq, sex = RSPdata$ssex, fem = 1, male = 2, sims = 1000)
q.obj
#It is often useful to summarize this object with print.
#It might be necessary to adjust size of the width of your console to make this content fit.
data(rbqv3.items)
rbqv3.items #The item content for the rbq
print(q.obj, rbqv3.items, initial = "RBQ", short = TRUE, EXPORT = FALSE)
# to export a .csv file change export to a location.
```

q.cor.print

Print q.cor

Description

This function is now deprecated. Please use [print](#) instead. Prints the results of a q.cor object in a more interpretable fashion. Also includes a convenient export option.

Usage

```
q.cor.print(obj, var.content, initial, rnd = 2, EXPORT = FALSE, short = FALSE)
```

Arguments

obj	An object returned by the q.cor() function.
var.content	A vector containing the content of the items or variables used as the "set" in a q.cor analysis.
initial	A character element indicating the initial letters for the item codes or names in set.
rnd	A numeric element specifying the number of places to round each correlation coefficient.
EXPORT	A file location to export the print results. If FALSE (default) no exportation is done.
short	A logical indicating whether long output (default) or short output is to be returned.

Details

This function serves as a compliment to the q.cor() function by summarizing the results of a q.cor object. This function easily adds the content of the items to the correlation table, sorts the correlation table, and allows the user to limit the table to only those items that are statistically significant at the $p < .10$ for the combined or $.05$ level for each gender by setting the short option = TRUE. In addition, the export option allows the user to output the results (either long or short) into a .csv file.

Author(s)

Ryne A. Sherman

See Also

[q.cor](#)

Examples

```
data(rbvq3.items)
data(RSPdata)
data(v2rbq)
names(v2rbq)
q.obj <- q.cor(RSPdata$sEXT, v2rbq, sex = RSPdata$ssex, fem = 1, male = 2, sims = 1000)
#It might be necessary to adjust size of the width of your console to make this content fit.
q.cor.print(q.obj, rbvq3.items, initial = "RBQ", short = TRUE, EXPORT = FALSE)
```

 rand.test

Randomization Test

Description

Computes a randomization test for the number of significant correlations and the average absolute r between set1 and set2.

Usage

```
rand.test(set1, set2, sims = 1000, crit = 0.95, graph = TRUE, seed = 2)
```

Arguments

set1	A data.frame containing the variable(s) to be correlated with set2. Can be a single vector, but must be converted to a data.frame.
set2	A matrix or data.frame containing the variables to be correlated with set1.
sims	A numeric indicating the number of randomizations to be conducted.
crit	A numeric between 0.0 and 1.0 indicating the critical value at which you will reject the null hypothesis of no relation between set1 and set2.
graph	A logical indicating whether graphical output should be returned.
seed	A numeric specifying the random seed to be used. If set to FALSE, no seed is used.

Details

When correlating a single variable of interest or a set of variables with another set of other variables, one practical consideration is the number of correlations one would expect to find by chance and/or the average absolute r between the two sets of variables. Following Sherman and Funder (2009), this function empirically estimates the sampling distribution for the number of statistically significant correlations and the average absolute r.

Value

A list containing...

AbsR	A vector containing the results for the average absolute r between set1 and set2. Includes the N (for complete cases), the observed average absolute r, the expected average absolute r under a null hypothesis, the standard error of the average absolute r, the p-value of the observed average absolute r, the 99.9 percent upper and lower bound confidence intervals for the p-value, and the critical value for the test to be statistically significant.
Sig	A vector containing the results for the number of significant correlations between set and the set2. Includes the N (for complete cases), the observed number significant, the expected number significant under a null hypothesis, the standard error of the number significant, the p-value of the observed number significant, the 99.9 percent upper and lower bound confidence intervals for the p-value, and the critical value for the test to be statistically significant.

Author(s)

Ryne A. Sherman

References

Sherman, R. A., & Funder, D. C. (2009). Evaluating correlations in studies of personality and behavior: Beyond the number of significant findings to be expected by chance. *Journal of Research in Personality*, 43, 1053-1063.

See Also

[q.cor](#), ~~~

Examples

```
data(caq)
data(beh.comp)
head(caq)
head(beh.comp)
#Note: In practice 'sims'=1000 is a better baseline
rand.test(caq,beh.comp,sims=100)
```

rate.caq

CAQ Rating

Description

This is a dataset of CAQ ratings of participants' personality completed by research assistants using likert type ratings.

Usage

```
data(rate.caq)
```

Format

A data frame with 64 observations on the following 100 variables.

CAQ001 Critical, skeptical, not easily impressed

CAQ002 A genuinely dependable and responsible person

CAQ003 Has a wide range of interests

CAQ004 Talkative

CAQ005 Behaves in a giving way toward others

CAQ006 Fastidious, perfectionistic

CAQ007 Favors conservative values

CAQ008 Appears to have a high degree of intellectual capacity

- CAQ009 Uncomfortable with uncertainty and complexity
- CAQ010 Anxiety and tension find outlet in bodily symptoms
- CAQ011 Protective of those close to him or her
- CAQ012 Tends to be self-defensive
- CAQ013 Thin-skinned; sensitive to criticism or interpersonal slight
- CAQ014 Genuinely submissive; accepts domination comfortably
- CAQ015 Skilled in social techniques of imaginative play, pretending, and humor
- CAQ016 Introspective and concerned with self as an object
- CAQ017 Sympathetic and considerate
- CAQ018 Initiates humor
- CAQ019 Seeks reassurance from others
- CAQ020 Has a rapid personal tempo; behaves and acts quickly
- CAQ021 Arouses nurturant feelings in others
- CAQ022 Feels a lack of personal meaning in life
- CAQ023 Extrapunitive; tends to transfer or project blame
- CAQ024 Prides self on being objective,rational
- CAQ025 Tends toward over-control of needs and impulses
- CAQ026 Productive; gets things done
- CAQ027 Shows condescending behavior in relations with others
- CAQ028 Tends to arouse liking and acceptance
- CAQ029 Turned to for advice and reassurance
- CAQ030 Gives up and withdraws where possible in the face of frustration and adversity
- CAQ031 Regards self as physically attractive
- CAQ032 Aware of the impression made on others
- CAQ033 Calm, relaxed in manner
- CAQ034 Over-reactive to minor frustrations, irritable
- CAQ035 Has warmth; has the capacity for close relationships; compassionate
- CAQ036 Subtly negativistic; tends to undermine and obstruct
- CAQ037 Guileful and deceitful, manipulative, opportunistic
- CAQ038 Has hostility toward others
- CAQ039 Thinks and associates ideas in unusual ways; has unconventional thought processes
- CAQ040 Vulnerable to real or fancied threat, generally fearful
- CAQ041 Moralistic
- CAQ042 Reluctant to commit to any definite course of action; tends to delay or avoid action
- CAQ043 Facially and/or gesturally expressive
- CAQ044 Evaluates the motivation of others in interpreting situations
- CAQ045 Has a brittle ego-defense system; does not cope well under stress or strain

- CAQ046 Engages in personal fantasy and daydreams
- CAQ047 Has a readiness to feel guilt
- CAQ048 Keeps people at a distance; avoids close interpersonal relationships
- CAQ049 Basically distrustful of people in general
- CAQ050 Unpredictable and changeable in behavior and attitudes
- CAQ051 Genuinely values intellectual and cognitive matters
- CAQ052 Behaves in an assertive fashion
- CAQ053 Unable to delay gratification
- CAQ054 Emphasizes being with others; gregarious
- CAQ055 Self-defeating
- CAQ056 Responds to humor
- CAQ057 Interesting, arresting person
- CAQ058 Enjoys sensuous experiences (touch, taste, smell, physical contact)
- CAQ059 Concerned with own body and adequacy of physiological functioning
- CAQ060 Has insight into own motives and behavior
- CAQ061 Creates and exploits dependency in people
- CAQ062 Tends to be rebellious and non-conforming
- CAQ063 Judges self and other in conventional terms
- CAQ064 Socially perceptive of a wide range of interpersonal cues
- CAQ065 Pushes and tries to stretch limits
- CAQ066 Enjoys esthetic impressions; is esthetically reactive
- CAQ067 Self-indulgent
- CAQ068 Basically anxious
- CAQ069 Sensitive to anything that can be construed as a demand
- CAQ070 Behaves in an ethically consistent manner
- CAQ071 Has high aspiration level for self
- CAQ072 Concerned with own adequacy as a person
- CAQ073 Tends to perceive many different contexts in sexual terms
- CAQ074 Subjectively unaware of self-concern; feels satisfied with self
- CAQ075 Has a clear-cut, internally consistent personality
- CAQ076 Projects feelings and motivations onto others
- CAQ077 Appears straightforward, forthright, candid in dealing with others
- CAQ078 Feels cheated and victimized by life; self-pitying
- CAQ079 Ruminates and has persistent, preoccupying thoughts
- CAQ080 Interested in members of the opposite sex
- CAQ081 Physically attractive; good-looking
- CAQ082 Has fluctuating moods

- CAQ083 Able to see to the heart of important problems
- CAQ084 Cheerful
- CAQ085 Emphasizes communication through action and non-verbal behavior
- CAQ086 Repressive and dissociative tendencies; denies unpleasant thoughts and conflicts
- CAQ087 Interprets basically simple and clear-cut situations in complicated and particularizing ways
- CAQ088 Personally charming
- CAQ089 Compares self to others
- CAQ090 Concerned with philosophical problems
- CAQ091 Power-oriented; values power in self and others
- CAQ092 Has social poise and presence; appears socially at ease
- CAQ093 Behaves in gender-appropriate masculine or feminine style and manner
- CAQ094 Expresses hostile feelings directly
- CAQ095 Tends to offer advice
- CAQ096 Values own independence and autonomy
- CAQ097 Emotionally bland; has flattened affect
- CAQ098 Verbally fluent; can express ideas well
- CAQ099 Self-dramatizing; histrionic
- CAQ100 Does not vary roles; relates to everyone in the same way

Source

<http://psy2.fau.edu/~shermanr/index.html>

References

Serfass, D. G., & Sherman, R. A. (2013). A methodological note on ordered q-sort ratings. *Journal of Research in Personality*, 47(12), 853-858

Examples

```
data(rate.caq)
head(rate.caq)
```

 rbqv3.items

 RBQ Items

Description

This is the abbreviated content from the Riverside Behavioral Q-Sort version 3 (67 items).

Usage

data(rbqv3.items)

Format

A data frame with 67 observations on the following variable.

items RBQ001 - Interviews others (if present) (e.g., asks a series of questions)
 RBQ002 - Volunteers a large amount of information about self
 RBQ003 - Seems interested in what someone had to say (Disregard whether interest appears "genuine" or "polite")
 RBQ004 - Tries to control the situation (Disregard whether attempts at control succeed or not)
 RBQ005 - Dominates the situation (Disregard intention, e.g., if P dominates the situation "by default" because other(s) present do very little, this item should receive high placement)
 RBQ006 - Appears to be relaxed and comfortable
 RBQ007 - Exhibits social skills (e.g., does things to make other(s) comfortable, keeps conversation moving, entertains or charms other(s))
 RBQ008 - Is reserved and unexpressive (e.g., expresses little affect; acts in a stiff, formal manner)
 RBQ009 - Laughs frequently (Disregard whether laughter appears to be "nervous" or "genuine")
 RBQ010 - Smiles frequently
 RBQ011 - Is physically animated; moves around a great deal
 RBQ012 - Seems to like other(s) present (e.g., would probably like to be friends with them)
 RBQ013 - Exhibits an awkward interpersonal style (e.g., seems to have difficulty knowing what to say, mumbles, fails to respond to other(s)' conversational advances)
 RBQ014 - Compares self to other(s) (whether others are present or not)
 RBQ015 - Shows high enthusiasm and a high energy level
 RBQ016 - Shows a wide range of interests (e.g., talks about many topics)
 RBQ017 - Talks at rather than with other(s) (e.g., conducts a monologue, ignores what others say)
 RBQ018 - Expresses agreement frequently (High placement implies agreement is expressed unusually often, e.g., in response to each and every statement made. Low placement implies unusual lack of expression of agreement.)
 RBQ019 - Expresses criticism (of anybody or anything) (Low placement implies expresses praise)
 RBQ020 - Is talkative (as observed in this situation)
 RBQ021 - Expresses insecurity (e.g., seems touchy or overly sensitive)
 RBQ022 - Shows physical signs of tension or anxiety (e.g., fidgets nervously, voice wavers)(Lack of signs of anxiety = middle placement; low placement = lack of signs under

- circumstances where you would expect to see them)
- RBQ023 - Exhibits a high degree of intelligence (NB: At issue is what is displayed in the interaction not what may or may not be latent. Thus, give this item high placement only if P actually says or does something of high intelligence. Low placement implies exhibition of low intelligence; medium placement = no information one way or the other)
- RBQ024 - Expresses sympathy (to anyone, i.e., including conversational references)(Low placement implies unusual lack of sympathy)
- RBQ025 - Initiates humor
- RBQ026 - Seeks reassurance (e.g., asks for agreement, fishes for praise)
- RBQ027 - Exhibits condescending behavior (e.g., acts as if self is superior to others [present, or otherwise])(Low placement implies acting inferior)
- RBQ028 - Seems likable (to other(s) present)
- RBQ029 - Seeks advice
- RBQ030 - Appears to regard self as physically attractive
- RBQ031 - Acts irritated
- RBQ032 - Expresses warmth (to anyone, e.g., include any references to "my close friend," etc)
- RBQ033 - Tries to undermine, sabotage or obstruct
- RBQ034 - Expresses hostility (no matter toward whom or what)
- RBQ035 - Is unusual or unconventional in appearance
- RBQ036 - Behaves in a fearful or timid manner
- RBQ037 - Is expressive in face, voice or gestures
- RBQ038 - Expresses interest in fantasy or daydreams (Low placement only if such interest is explicitly disavowed)
- RBQ039 - Expresses guilt (about anything)
- RBQ040 - Keep other(s) at a distance; avoids development of any sort of interpersonal relationship (Low placement implies behavior to get close to other(s))
- RBQ041 - Shows interest in intellectual or cognitive matters (e.g., by discussing an intellectual idea in detail or with enthusiasm)
- RBQ042 - Seems to enjoy the situation
- RBQ043 - Says or does something interesting
- RBQ044 - Says negative things about self (e.g., is self-critical; expresses feelings of inadequacy)
- RBQ045 - Displays ambition (e.g., passionate discussion of career plans, course grades, opportunities to make money)
- RBQ046 - Blames others (for anything)
- RBQ047 - Expresses self-pity or feelings of victimization
- RBQ048 - Expresses sexual interest (e.g., acts attracted to someone present; expresses interest in dating or sexual matters in general)
- RBQ049 - Behaves in a cheerful manner
- RBQ050 - Gives up when faced with obstacles (Low placement implies unusual persistence)
- RBQ051 - Behaves in a stereotypically masculine/feminine style or manner (Apply the usual stereotypes appropriate to the P's sex. Low placement implies behavior stereotypical of the opposite sex)
- RBQ052 - Offers advice
- RBQ053 - Speaks fluently and expresses ideas well
- RBQ054 - Emphasizes accomplishments of self, family or acquaintances (Low placement = emphasizes failures of these individuals)

RBQ055 - Behaves in a competitive manner (Low placement implies cooperative behavior)
 RBQ056 - Speaks in a loud voice
 RBQ057 - Speaks sarcastically (e.g., says things (s)he does not mean; makes facetious comments that are not necessarily funny)
 RBQ058 - Makes or approaches physical contact with other(s) (Of any sort, including sitting unusually close without touching) (Low placement implies unusual avoidance of physical contact, such as large interpersonal distance)
 RBQ059 - Engages in constant eye contact with someone (Low placement implies unusual lack of eye contact)
 RBQ060 - Seems detached from the situation
 RBQ061 - Speaks quickly (Low placement = speaks slowly)
 RBQ062 - Acts playful
 RBQ063 - Other(s) seek advice from P
 RBQ064 - Concentrates on/works hard at a task (Low placement implies loafing)
 RBQ065 - Engages in physical activity (e.g., works up a sweat)(Low placement = almost completely sedentary)
 RBQ066 - Acts in a self-indulgent manner (e.g., spending, eating, or drinking)(Low placement implies self-denial)
 RBQ067 - Exhibits physical discomfort or pain (High placement = in excess of what seems proportionate; Low placement implies lack of these signs where expected)

Source

<http://psy2.fau.edu/~shermanr/index.html>

References

Sherman, R. A., Nave, C. S., & Funder, D. C. (2012). Properties of persons and situations related to overall and distinctive personality-behavior congruence. *Journal of Research in Personality*, 46, 87-101

Examples

```
data(rbqv3.items)
rbqv3.items
```

reQ

Forced Q-Sort Distribution

Description

Replace the values in x with the distribution of values defined by dist.

Usage

```
reQ(x, dist, ties = "random")
```

Arguments

<code>x</code>	A data.frame, matrix, or numeric vector containing the values to be reQ'd. It is assumed that the rows are to be reQ'd if a matrix or data.frame is given.
<code>dist</code>	A numeric vector whose sum must be equal to the length of <code>x</code> . The Q values are assumed to be from 1 to <code>length(dist)</code> . The values in <code>dist</code> indicate the number of times each Q value is to be used.
<code>ties</code>	A character element passed to the <code>rank</code> function indicating how ties should be broken.

Details

This function takes a vector of data and "normalizes" it by forcing it to fit a Q-sort distribution (see Block, 1978 for information on the Q-sort method).

Value

Returns a vector of size `x` containing data that has been normalized to fit a Q-Sort Distributions

Author(s)

Ryne A. Sherman

References

Block, J. (1978). The Q-Sort method in personality assessment and psychiatric research. Palo Alto, CA: Consulting Psychologists Press. (Originally published 1961).

See Also

[ipsatize rank](#)

Examples

```
data(rate.caq)
head(rate.caq)
rowMeans(rate.caq)
caq.dist = c(5,8,12,16,18,16,12,8,5)
caq.reQ = reQ(rate.caq, dist = caq.dist)
head(caq.reQ)
rowMeans(caq.reQ)
```

Description

This is the original data file for the [multicon-package](#). All other data objects are subsetted or derived from this dataset. This data set is part of a larger data collection project, the Riverside Situation Project (RSP). The Riverside Situation Project was designed to measure and understand the psychological characteristics of situations and their relationship to personality, behavior, and emotion. The details of the data collection are provided by Sherman and colleagues (2010), but are briefly summarized here. 205 target participants came to the lab on 5 occasions. On the first visit to the lab participants completed a large number of personality measures about themselves. They also provided the names to of two acquaintances who knew them well and could come to the lab to rate their (the participants) personalities. On visits 2-5, participants came to the lab and were asked to describe the situation they were in the day before at a prespecified time. They then rated that situation using the Riverside Situational Q-sort, a measure of psychological characteristics of situations. Lastly, participants rated their behavior in that situation using the Riverside Behavioral Q-sort. Each visit was separated by a minimum of 48 hours.

Data from that project have been used in several publications (Sherman, Nave, & Fundeer, 2010, 2012, 2013; Sherman, Figueredo, & Funder, 2013).

Usage

`data(RSPdata)`

Format

A data frame with 205 observations on 619 variables.

The following items are only contained in RSPdata:

SID: Subject ID Number

ssex: Subject sex: male = 1, fem = 2

sEXT: Extraversion Composite from the BFI

sAGR: Agreeableness Composite from the BFI

sCON: Conscientiousness Composite from the BFI

sNEUR: Neuroticism Composite from the BFI

sOPEN: Openness Composite from the BFI

RSPdata also contains items from the following datasets:

[acq1](#): This is an acquaintance rating of a participant's personality in the Riverside Situation Project.

[acq2](#): This is an acquaintance rating of a participant's personality in the Riverside Situation Project.

[acq.comp](#): This is the composite of two acquaintance CAQ ratings of a participant's personality from the Riverside Situation Project

[bfi.set](#): These are Big Five Inventory self ratings of participants from the Riverside Situation Project.

[caq](#): These are self ratings of personality using the California Adult Q-Set in the Riverside Situation Project.

[v2rbq](#): This is participants' self-ratings of their own behavior using the RBQ in the 1st of 4 situations that they experienced.

v3rbq: This is participants' self-ratings of their own behavior using the RBQ in the 2nd of 4 situations that they experienced.

v4rbq: This is participants' self-ratings of their own behavior using the RBQ in the 3rd of 4 situations that they experienced.

v5rbq: This is participants' self-ratings of their own behavior using the RBQ in the 4th of 4 situations that they experienced.

beh.comp: This is a composite of a participants' behavior across 4 situations.

Details

Subjects are listed as Rows (N=205). Items of several personality measures (e.g. CAQ, BFI) and measures of behavior (RBQ) are listed in columns.

Source

<http://psy2.fau.edu/~shermanr/index.html> <http://rap.ucr.edu/furrwagermanfunder.doc>

References

Sherman, R. A., Nave, C. S., & Funder, D. C. (2010). Situational similarity and personality predict behavioral consistency. *Journal of Personality and Social Psychology*, 99(2), 330-343.

Sherman, R. A., Nave, C. S., & Funder, D. C. (2012). Properties of persons and situations related to overall and distinctive personality-behavior congruence. *Journal of Research in Personality*, 46, 87-101.

Sherman, R. A., Nave, C. S., & Funder, D. C. (2013). Situational construal is related to personality and gender. *Journal of Research in Personality*, 47(1), 142-154.

Sherman, R. A., Figueredo, A. J., & Funder, D. C. (2013). The behavioral correlates of overall and distinctive life history strategy. *Journal of Personality and Social Psychology*, 105(5), 873-888.

Examples

```
data(RSPdata)
names(RSPdata)
str(RSPdata)
```

scale2

Scale

Description

Returns scores in x after rescaling

Usage

```
scale2(x, center = TRUE, scale = TRUE)
```

Arguments

x	A numeric vector, matrix or data.frame
center	A logical indicating whether the scores in the columns in x should have their column means subtracted
scale	A logical indicating where the scores in the columns in x should be divided by their column standard deviations

Details

The built-in R function `scale` uses the sample standard deviation when its `scale` option is set to `TRUE`. This function uses the population standard deviation instead.

Value

Returns a variable with dimensions equal to that has been scaled according to the arguments used

Author(s)

Ryne A. Sherman

See Also

[scale](#)

Examples

```
scale(1:5)
scale2(1:5)
```

scoreTest

Scoring Multiple Tests, Scales, or Composites

Description

A function for scoring tests, measures, or questionnaires

Usage

```
scoreTest(items, keys, Zitems = FALSE, maxScore = NULL, minScore = NULL,
rel = FALSE, nomiss = .8, tr = 0, item.names = NULL, check.keys=TRUE)
```

Arguments

<code>items</code>	A data.frame containing the items or questions on the test or measure.
<code>keys</code>	A list containing the scoring keys for each scale or construct to be scored from the test or measure. Each object in the list consists of a single numeric vector indicating the column position of 'items' belonging to that scale. Placing a negative sign in front of the column number indicates that this item should be reverse scored.
<code>Zitems</code>	A logical indicating whether the items should be standardized (Z-scored) prior to the computation of scale scores.
<code>maxScore</code>	A numeric element indicating the maximum possible score on the scales used to rate the items. Useful when (a) there are items that need to be reverse scored and (b) the maximum score on a rating scale is never used. In all other cases this is not needed.
<code>minScore</code>	A numeric element indicating the minimum possible score on the scales used to rate the items. Useful when (a) there are items that need to be reverse scored and (b) the minimum score on a rating scale is never used. In all other cases this is not needed.
<code>rel</code>	A logical indicating whether reliability statistics should be computed for each scale.
<code>nomiss</code>	A numeric between 0 and 1 indicating the proportion of the data that must be present to compute a scale score for a particular observation. Any subject with fewer than this proportion of valid data points will receive NA.
<code>tr</code>	A numeric between 0 and 1 indicating the amount of trimming to be done when computing a scale score.
<code>item.names</code>	A character vector indicating the names for the items. If left NULL, the names provided in keys will be used.
<code>check.keys</code>	A logical indicating whether, when calculating reliabilities, the function should check for items negatively correlated with the scale and automatically reverse them for the alpha calculation. Generally, with this function items should already be scored in the proper direction. Thus, this serves as a warning that items may be miskeyed.

Details

This function computes mean scores for each of the scales provided in the keys list. If `rel=TRUE`, it also computes the reliabilites for the composite scores based on the keys list.

Value

If `rel=FALSE`, then a matrix containing the composite or scale scores is returned. If `rel=TRUE`, a list containing...

<code>rel</code>	The reliability statistics for each composite or scale
<code>scores</code>	The composite or scale scores.

Author(s)

Ryne A. Sherman

See Also

[plotProfile](#) [meanif](#) [scoreItems](#)

Examples

```
data(bfi)
keys.list <- list("agree"=c(-1,2,3,4,5),
  "conscientious"=c(6,7,8,-9,-10),"extraversion"=c(-11,-12,13,14,15),
  "neuroticism"=c(16,17,18,19,20),"openness"=c(21,-22,23,24,-25))
out <- scoreTest(bfi, keys.list, nomiss=0, maxScore=6, minScore=1)
outZ <- scoreTest(bfi, keys.list, Zitems=TRUE, nomiss=0)
describe(out) # Descriptives of Scale Scores
describe(outZ)
outR <- scoreTest(bfi, keys.list, nomiss=0, rel=TRUE, maxScore=6)
outR$rel # Scale reliabilities
```

sig.r

Significance Levels for Correlations

Description

Returns asterisks denoting statistical significance levels for a vector of correlations

Usage

```
sig.r(r, n, tail)
```

Arguments

r	A numeric vector of correlation coefficients
n	n the sample size associated with the vector of correlation coefficients
tail	An integer of value 1 or 2 indicating whether a one-tailed (1) or two-tailed (2) significance level is to be used.

Details

This function is called by the `q.cor` function to put statistical significance levels next to the resulting correlations.

Value

A symbol is returned to identify the significance level of a correlation coefficient. A value of " " denotes $p > .1$. A value of "+" denotes $p < .1$. A value of "*" denotes $p < .05$. A value of "***" denotes $p < .01$. A value of "****" denotes $p < .001$.

Author(s)

Ryne A. Sherman

See Also

[q.cor](#), [~~~](#)

Examples

```
# A correlation of r=.15 with a sample of 100 is significant
#at p < .05 using a one-tailed t-test
sig.r(r=.15,n=200,tail=1)
# A correlation of r=.1 is trending toward significance at p < .1.
sig.r(r=.1,n=200,tail=1)
# Or it can be used on a vector.
#This is helpful for displaying significance levels of results.
v <- c( .1, .3, .4, .05, .04, .8)
sig.labels <- sig.r(v, 200, 1)
table1 <- data.frame(v, sig.labels)
colnames(table1) <- c("r", "sig level")
table1
```

splithalf.r

Split-half Correlation and Reliability

Description

Estimates the split-half correlation and reliability for a given set of items in matrix or data.frame x. This function finds the average of the randomly split-half correlation for a data.frame() of items. It also returns the reliability (speaman-brown) which should be equivalent to cronbach's alpha. Assumes the split-halves are exactly halves or as close to it as possible.

Usage

```
splithalf.r(x, sims = 1000, graph = TRUE, seed = 2)
```

Arguments

x	A matrix or data.frame containing the items or variables for which one wants to estimate the splithalf reliability
sims	A numeric value indicating the number of splithalf reliabilities to compute of which the mean will be used as the best estimate.
graph	A logical element indicating whether graphical output should be returned.
seed	A numeric element specifying the random seed to be used. If set to FALSE, no seed is used.

Details

The columns of x are randomly divided into two equal halves, a scale mean is computed for each half, and then the two sets of scale means are correlated to estimate a splithalf correlation. The splithalf correlation is adjusted by the spearman-brown prophecy formula to create a splithalf reliability. This procedure is repeated 'sims' times and the mean of the splithalf correlations (Avg.r) is returned as the best estimate of the reliability of a single item, while the mean of the splithalf reliabilities (Rel) is returned as the best estimate of the reliability of the composite of all items. The SD of the reliability estimate (standard error in this case) is also returned.

Value

A matrix summarizing the results:

N Vars	The number of variables in x
Mean Split-Half r	The average of all split-half correlations
Rel	The average of all split-half reliabilities
Rel SD	The standard deviation of all split-half reliabilities

Author(s)

Ryne A. Sherman

See Also

[vector.splithalf](#)

Examples

```
data(bfi.set)
# Imagine we are forming a composite extraversion variable from the eight
# extraversion items in BFI.set
# Three items need to be reverse scored
sBFI6r <- 6 - bfi.set$sBFI6
sBFI21r <- 6 - bfi.set$sBFI21
sBFI31r <- 6 - bfi.set$sBFI31
# Now put them all into one data.frame
ext.vars <- data.frame(bfi.set$sBFI1, sBFI6r, bfi.set$sBFI11,
bfi.set$sBFI16, sBFI21r, bfi.set$sBFI26, sBFI31r, bfi.set$sBFI36)
head(ext.vars) # Looks good
# Now compute the splithalf reliability for a possible composite
splithalf.r(ext.vars, sims=100) # Note in practice sims = 1000 or more might be preferred
# Should be close to the value resulting from alpha
alpha.cov(cov(ext.vars, use="p"))
# Getting the 'exact' splithalf correlation and reliability
# by computing the splithalf correlation for all possible halves
# (for comparison purposes)
combs <- combn(8,4)
out <- rep(NA, ncol(combs))
for(i in 1:ncol(combs)) {
```

```

c1 <- composite(ext.vars[,combs[,i]])
c2 <- composite(ext.vars[,-c(combs[,i])])
out[i] <- cor(c1,c2)
}
mean(out)          # Exact splithalf correlation
mean(out*2/(out+1)) # Exact splithalf reliability

```

structSumIPC

Structural Summary Method for the Interpersonal Circumplex

Description

Computes scores from the structural summary method (Gurtman, 1992; Gurtman & Pincus, 2003; Wright, Pincus, Conroy, & Hilsenroth, 2009) for the interpersonal circumplex.

Usage

```
structSumIPC(x, ord = c("PA", "BC", "DE", "FG", "HI", "JK", "LM", "NO"))
```

Arguments

x	A matrix or data.frame containing the association values (e.g., correlations) between the variable(s) of interest and the IPC scales. The IPC scales should be the columns and the variable(s) of interest should be the rows.
ord	A character vector of length eight specifying the order of the IPC scales (columns) in x. By default the function assumes they are in counter-clockwise order starting from the vertical axis at 12:00.

Details

This function is used to create a unit-weighted composite of the variables listed in the columns of the matrix or data.frame "set" for each row. The nomiss option lets one specify the proportion of valid cases required for the composite mean to be computed. By default, the mean is computed if at least 80 percent of the data in the the row are valid.

Value

A data.frame containing the following columns:

DOM	Item's association with the dominance dimension of the IPC
LOV	Item's association with the warmth dimension of the IPC
DEG	Item's angle on the IPC grid (from 0 to 360)
AMP	Item's discriminant validity; degree to which it corresponds to only a single octant
ELEV	Item's mean level of association across all 8 octants
SStot	Item's total sums of squares with the IPC
Rsq	Item's goodness-of-fit with the IPC (how well do the summary stats capture the correlations between the item and the octants).

References

- Gurtman, M. B. (1992). Construct validity of interpersonal personality measures: The Interpersonal Circumplex as a nomological net. *Journal of Personality and Social Psychology*, 63, 105-118.
- Gurtman, M. B., & Pincus, A. L. (2003). The circumplex model: Methods and research applications. In J. A. Schinka & W. F. Velicer (Eds.), *Handbook of psychology: Research methods in psychology* (Vol. 2, pp. 407-428). Hoboken, NJ: Wiley.
- Markey, P. M., Funder, D. C., & Ozer, D. J. (2003). Complementarity of interpersonal behavior in dyadic interactions. *Personality and Social Psychology Bulletin*, 29, 1082-1090.
- Wright, A. G., Pincus, A. L., Conroy, D. E., & Hilsenroth, M. J. (2009). Integrating methods to optimize circumplex description and comparison of groups. *Journal of Personality Assessment*, 91, 311-322.

Examples

```
# How is the CAQ associated with the IPC?
data(caq) # Load the caq data
data(beh.comp) #Load Behavioral composite data
data(caq.items) #Load CAQ items

# Get IPC octant scores from the behavioral composites of the RBQ.
PA <- composite(beh.comp[,c(56, 4, 5)])
BC <- composite(beh.comp[,c(17, 27, 54)])
DE <- composite(beh.comp[,c(60, 19, 34)])
FG <- composite(beh.comp[,c(13, 22, 36)])
HI <- composite(beh.comp[,c(50, 21, 26)])
JK <- composite(beh.comp[,c(3, 18, 29)])
LM <- composite(beh.comp[,c(7, 32, 28)])
NO <- composite(beh.comp[,c(15, 20, 62)])
IPC.set <- data.frame(PA,BC,DE,FG,HI,JK,LM,NO) # Put them into one data.frame

# Get the correlations between the CAQ and the IPC
r <- cor(caq, IPC.set)

# Apply the structural summary method to the correlations
CAQsum <- structSumIPC(r)
CAQsum$items <- caq.items
CAQsum

# Plot the results (only those with Rsq >= .70)
CAQsum.sig <- data.frame(CAQsum[CAQsum$Rsq >= .7,], row.names=1:51)
plotDEGcaq <- CAQsum.sig$DEG
CAQx <- cos(plotDEGcaq * (pi / 180))
CAQy <- sin(plotDEGcaq * (pi / 180))
plotPOScaq <- ifelse(plotDEGcaq > 90 & plotDEGcaq < 270, 2, 4)
plotDEGcaq <- ifelse(plotDEGcaq > 90 & plotDEGcaq < 270, plotDEGcaq + 180, plotDEGcaq)

plot(CAQx, CAQy, xlim=c(-2, 2), ylim=c(-2, 2), type="n", xlab="Warmth",
ylab="Dominance", font.main=1, main="CAQ and the IPC", xaxt="n", yaxt="n")
for(i in 1:51) {
  text(CAQx[i], CAQy[i], labels=CAQsum.sig$items[i,1], cex=.75,
srt=plotDEGcaq[i], pos=plotPOScaq[i])
}

# Adding a circle
circX <- seq(-1,1, by=.01)
```

```

circY <- sqrt(1 - circX^2)
lines(c(circX,-circX), c(circY,-circY))
lines(c(0,0), c(-1,1))
lines(c(-1,1), c(0,0))

```

tContrast

Constrast T-tests

Description

Computes a t-test for multiple groups using a given set of contrast weights.

Usage

```

tContrast(IV, ...)

## Default Method
## Default S3 method:
tContrast(IV, DV, wgt = c(1, -1),
alpha = .05, EQVAR = FALSE, alternative = "unequal", ...)

## Method for class 'formula'
## S3 method for class 'formula'
tContrast(formula, data = NULL, wgt = c(1, -1),
alpha = .05, EQVAR = FALSE, alternative = "unequal", ...)

```

Arguments

IV	A factor of the same length as DV containing the independent variable codes.
DV	A numeric vector of the same length as IV containing the measured values.
formula	A formula of the form lhs ~ rhs where lhs is a numeric vector containing the data values and rhs is a variable containing the corresponding groups.
data	An optional data frame containing the variables in the formula.
wgt	A numeric vector containing the contrast weights corresponding to each successive level of the IV. Defaults to c(1, -1), implying that the first group is expected to have a higher mean than the second.
alpha	A numeric element > .00 and < 1.00 specifying the Type I error rate.
EQVAR	A logical indicating whether equal variances amongst the groups should be assumed. Defaults to FALSE (Welch's Method).
alternative	A character vector specifying the alternative hypothesis. Must be one of "unequal", "greater", or "less".
...	Further arguments to be passed to or from methods.

Details

This function computes a t-contrast for any number of groups based on the specified contrast weights (Rosenthal, Rosnow, & Rubin, 2000). By setting the EQVAR option to TRUE degrees of freedom are consistent with Student's method. If EQVAR is FALSE (default) then degrees of freedom are calculated using the Welch-Satterthwaite approximation. The wgt option allows one to specify contrast weights to test hypotheses with more than 2 levels of an IV. By default it tests the hypothesis that two means are unequal. If a directional hypothesis is known ahead of time, use "greater" to predict that higher contrast weights have higher means and "less" to predict the opposite. For a robust version of this function see [yuenContrast](#). The entire family of possible T-test equations can be found here:

<http://rynesherman.com/T-Family.doc>

Value

A list containing...

Ms	A data.frame with the sample size, mean, and weight for each group.
test	A data.frame with the test statistic (stat), the degrees of freedom (df), the critical value for the test statistic (crit), the p-value, and an r-contrast (effect size).

Author(s)

Ryne A. Sherman

References

Rosenthal, R., Rosnow, R. L., & Rubin, D. B. (2000). *Contrasts and Effect Sizes in Behavioral Research: A Correlational Approach*. Cambridge, UK: Cambridge University Press.

See Also

[yuenContrast](#) [t.test](#)

Examples

```
dv <- c(rnorm(30, mean=1, sd=2), rnorm(20))
iv <- c(rep(1,30),rep(2,20))

# Student's t-test (assuming equal variances)
t.test(dv ~ iv, var.equal=TRUE)
# Welch's t-test (not assuming equal variance)
t.test(dv ~ iv, var.equal=FALSE)
# tContrast assuming equal variances
tContrast(iv, dv, EQVAR=TRUE)
# tContrast not assuming equal variances
tContrast(iv, dv, EQVAR=FALSE)

# Contrast with 3 Groups
dv <- c(rnorm(30), rnorm(20, mean=-.5), rnorm(10, mean=-1))
iv <- c(rep("c",30), rep("b", 20), rep("a", 10))
```

```

# t-contrast with Welch-Satterthwaite DFs
tContrast(iv, dv, wgt=c(1, 0, -1))
# Compare with yuenContrast with no trimming
yuenContrast(iv, dv, wgt=c(1, 0, -1), tr=0)
# With the formula method
yuenContrast(dv ~ iv, wgt = c(1, 0, -1))

```

temp.match

*Template Matching***Description**

Returns the pearson correlation for each row in `y.set` with a given numeric vector 'template' for both the overall (raw) scores in `y.set` and the distinctive scores in `y.set` after using linear regression to remove the mean profile in `y.set`.

Usage

```
temp.match(template, y.set, nomiss = 1, distinct = FALSE)
```

Arguments

<code>template</code>	A numeric vector of length equal to the number of columns of <code>y.set</code> to be correlated with each row of <code>y.set</code>
<code>y.set</code>	A data.frame or matrix of which rows are to be correlated with <code>template</code>
<code>nomiss</code>	A numeric element between .00 and 1.00 specifying the proportion values in <code>y.set</code> required to be complete before NA is returned instead of the the correlation. The default of 1.00 means that any missing case returns a result of NA.
<code>distinct</code>	A logical indicating whether distinctive profile correlations (agreement) between <code>template</code> and <code>y.set</code> should be computed.

Details

For each observational unit in `y.set` its correlation with `template` is returned. If the proportion of valid values for an observational unit is less than `nomiss` NA is returned for that observational unit. If the `distinct` option is set to TRUE, this function also returns the "distinctive" correlations to the `template` after statistically removing the mean profile in `y.set` from each profile in `y.set`.

Value

If `distinct = FALSE`: Returns a vector or `template` match scores corresponding to each row in `y`. If `distinct = TRUE`: A list of length 2:

<code>yNorm</code>	A vector containing the normative (average) profile of <code>y.set</code>
<code>Matches</code>	A data.frame containing the Overall and Distinctive <code>template</code> match scores

Author(s)

Ryne A. Sherman

See Also

[Profile.r](#) [Profile.reg](#) [temp.resid](#) [temp.match.rep](#)

Examples

```
data(caq)
data(opt.temp)
# Template Matching
# Sometimes we want to know how closely each Profile matches a theoretically
# or empirically derived Profile (i.e., a template).
# Here is the template for the optimally adjusted person in the CAQ.
opt.temp
temp.match(opt.temp, caq) # The overall template match scores
temp.match(opt.temp, caq, distinct=TRUE) # Both overall and distinctive template match scores
# The replicability (reliability) of the template match scores can also be estimated
temp.match.rep(opt.temp, caq)
```

temp.match.rep	<i>Template Matching Replicability</i>
----------------	--

Description

Returns the estimated replicability (reliability) coefficients for Overall and Distinctive template match scores (see temp.match) with confidence intervals.

Usage

```
temp.match.rep(template, y.set, CI = 0.95, CItype = "xci")
```

Arguments

template	A numeric vector of length equal to the number of columns of y.set to be correlated with each row of y.set
y.set	A data.frame or matrix of which rows are to be correlated with template
CI	A numeric between .00 and 1.00 indicating the desired confidence level.
CItype	A character element of either "xci" or "aci" specifying the type of confidence interval to compute based on Koning & Franses (2003).

Details

Sherman and Wood (2013) describe a method for computing the replicability of a vector of correlation coefficients (see `vector.alpha`). They also discuss how this may be applied to profile correlations. This function applies the strategy outlined by Sherman and Wood (in prep.) and used by the `vector.alpha` function to template match correlations. The results include the replicability point estimate for both the overall correlations between template and `y.set` as well as the distinctive profile correlations. Confidence intervals are computed based on Koning and Frances' (2003) methods, choosing either asymptotic ("aci") or exact ("xci").

Value

Overall Replicability of Overall Template Match Scores
 Distinctive Replicability of Distinctive Template Match Scores
 Upper and Lower Limits of the confidence interval are returned.

Author(s)

Ryne A. Sherman

References

Sherman, R. A. & Wood, D. (in press). Estimating the expected replicability of a pattern of correlations and other measures of association. *Multivariate Behavioral Research*. Koning, A. J. & Franses, P. H. (2003). Confidence Intervals for Cronbach's Alpha Coefficient values. ERIM Report Series Reference No. ERS-2003-041-MKT. Available at SSRN: <http://ssrn.com/abstract=423658>

See Also

[temp.match](#) [vector.alpha](#)

Examples

```
data(opt.temp)
data(caq)
# Template Matching
# Sometimes we want to know how closely each Profile matches a theoretically
# or empirically derived Profile (i.e., a template).
# Here is the template for the optimally adjusted person in the CAQ.
opt.temp
temp.match(opt.temp, caq) # The overall template match scores
# Now lets look at replicability of these template scores
temp.match.rep(opt.temp, caq)
```

`temp.resid`*Residuals from Template Prediction*

Description

Returns the residuals for each row of `y.set` as predicted by the vector of values in `template`.

Usage

```
temp.resid(template, y.set, nomiss = 0.8)
```

Arguments

<code>template</code>	A vector of values used to predict the values in the row's of <code>y.set</code> . The length should be equal to <code>nrow(y.set)</code> .
<code>y.set</code>	A <code>data.frame</code> or matrix of which the row's are to be predicted by the values in <code>template</code>
<code>nomiss</code>	A numeric element between <code>.00</code> and <code>1.00</code> specifying the proportion of x-y pairs required to be complete before NA is returned instead of the regression coefficients. The default of <code>.80</code> means that if more than 20 percent of the x-y pairs are incomplete an NA will be returned.

Details

The vector of scores in `template` is used to predict each row in `y.set` and the resulting residuals are returned.

Value

A `data.frame` with the same dimensions as `y.set` is returned containing the residual values after predicting `y.set` from the `template`.

Author(s)

Ryne A. Sherman

See Also

[Profile.reg](#) [Profile.resid](#) [temp.match](#)

Examples

```
data(opt.temp)
data(caq)
# Template Matching
# Sometimes we want to know how closely each Profile matches a theoretically
# or empirically derived Profile (i.e., a template).
# Here is the template for the optimally adjusted person in the CAQ.
```

```

opt.temp
temp.match(opt.temp, caq) # The overall template match scores
# Now if we want what is left after removing the template from each profile...
caq.opt.resids <- temp.resid(opt.temp, caq)
head(caq.opt.resids)

```

v2rbq

Situation 1 RBQ

Description

This is participants' self-ratings of their own behavior using the RBQ in the 1st of 4 situations that they experienced.

Usage

```
data(v2rbq)
```

Format

A data frame with 205 observations on the following 67 variables.

v2rbq001 Interviews others (if present) (e.g., asks a series of questions)

v2rbq002 Volunteers a large amount of information about self

v2rbq003 Seems interested in what someone had to say (Disregard whether interest appears "genuine" or "polite")

v2rbq004 Tries to control the situation (Disregard whether attempts at control succeed or not)

v2rbq005 Dominates the situation (Disregard intention, e.g., if P dominates the situation "by default" because other(s) present do very little, this item should receive high placement)

v2rbq006 Appears to be relaxed and comfortable

v2rbq007 Exhibits social skills (e.g., does things to make other(s) comfortable, keeps conversation moving, entertains or charms other(s))

v2rbq008 Is reserved and unexpressive (e.g., expresses little affect; acts in a stiff, formal manner)

v2rbq009 Laughs frequently (Disregard whether laughter appears to be "nervous" or "genuine")

v2rbq010 Smiles frequently

v2rbq011 Is physically animated; moves around a great deal

v2rbq012 Seems to like other(s) present (e.g., would probably like to be friends with them)

v2rbq013 Exhibits an awkward interpersonal style (e.g., seems to have difficulty knowing what to say, mumbles, fails to respond to other(s)' conversational advances)

v2rbq014 Compares self to other(s) (whether others are present or not)

v2rbq015 Shows high enthusiasm and a high energy level

v2rbq016 Shows a wide range of interests (e.g., talks about many topics)

- v2rbq017 Talks at rather than with other(s) (e.g., conducts a monologue, ignores what others say)
- v2rbq018 Expresses agreement frequently (High placement implies agreement is expressed unusually often, e.g., in response to each and every statement made. Low placement implies unusual lack of expression of agreement.)
- v2rbq019 Expresses criticism (of anybody or anything) (Low placement implies expresses praise)
- v2rbq020 Is talkative (as observed in this situation)
- v2rbq021 Expresses insecurity (e.g., seems touchy or overly sensitive)
- v2rbq022 Shows physical signs of tension or anxiety (e.g., fidgets nervously, voice wavers)(Lack of signs of anxiety = middle placement; low placement = lack of signs under circumstances where you would expect to see them)
- v2rbq023 Exhibits a high degree of intelligence (NB: At issue is what is displayed in the interaction not what may or may not be latent. Thus, give this item high placement only if P actually says or does something of high intelligence. Low placement implies exhibition of low intelligence; medium placement = no information one way or the other)
- v2rbq024 Expresses sympathy (to anyone, i.e., including conversational references)(Low placement implies unusual lack of sympathy)
- v2rbq025 Initiates humor
- v2rbq026 Seeks reassurance (e.g., asks for agreement, fishes for praise)
- v2rbq027 Exhibits condescending behavior (e.g., acts as if self is superior to others [present, or otherwise])(Low placement implies acting inferior)
- v2rbq028 Seems likable (to other(s) present)
- v2rbq029 Seeks advice
- v2rbq030 Appears to regard self as physically attractive
- v2rbq031 Acts irritated
- v2rbq032 Expresses warmth (to anyone, e.g., include any references to "my close friend," etc)
- v2rbq033 Tries to undermine, sabotage or obstruct
- v2rbq034 Expresses hostility (no matter toward whom or what)
- v2rbq035 Is unusual or unconventional in appearance
- v2rbq036 Behaves in a fearful or timid manner
- v2rbq037 Is expressive in face, voice or gestures
- v2rbq038 Expresses interest in fantasy or daydreams (Low placement only if such interest is explicitly disavowed)
- v2rbq039 Expresses guilt (about anything)
- v2rbq040 Keep other(s) at a distance; avoids development of any sort of interpersonal relationship (Low placement implies behavior to get close to other(s))
- v2rbq041 Shows interest in intellectual or cognitive matters (e.g., by discussing an intellectual idea in detail or with enthusiasm)
- v2rbq042 Seems to enjoy the situation
- v2rbq043 Says or does something interesting
- v2rbq044 Says negative things about self (e.g., is self-critical; expresses feelings of inadequacy)

- v2rbq045 Displays ambition (e.g., passionate discussion of career plans, course grades, opportunities to make money)
- v2rbq046 Blames others (for anything)
- v2rbq047 Expresses self-pity or feelings of victimization
- v2rbq048 Expresses sexual interest (e.g., acts attracted to someone present; expresses interest in dating or sexual matters in general)
- v2rbq049 Behaves in a cheerful manner
- v2rbq050 Gives up when faced with obstacles (Low placement implies unusual persistence)
- v2rbq051 Behaves in a stereotypically masculine/feminine style or manner (Apply the usual stereotypes appropriate to the P's sex. Low placement implies behavior stereotypical of the opposite sex)
- v2rbq052 Offers advice
- v2rbq053 Speaks fluently and expresses ideas well
- v2rbq054 Emphasizes accomplishments of self, family or acquaintances (Low placement = emphasizes failures of these individuals)
- v2rbq055 Behaves in a competitive manner (Low placement implies cooperative behavior)
- v2rbq056 Speaks in a loud voice
- v2rbq057 Speaks sarcastically (e.g., says things (s)he does not mean; makes facetious comments that are not necessarily funny)
- v2rbq058 Makes or approaches physical contact with other(s) (Of any sort, including sitting unusually close without touching) (Low placement implies unusual avoidance of physical contact, such as large interpersonal distance)
- v2rbq059 Engages in constant eye contact with someone (Low placement implies unusual lack of eye contact)
- v2rbq060 Seems detached from the situation
- v2rbq061 Speaks quickly (Low placement = speaks slowly)
- v2rbq062 Acts playful
- v2rbq063 Other(s) seek advice from P
- v2rbq064 Concentrates on/works hard at a task (Low placement implies loafing)
- v2rbq065 Engages in physical activity (e.g., works up a sweat)(Low placement = almost completely sedentary)
- v2rbq066 Acts in a self-indulgent manner (e.g., spending, eating, or drinking)(Low placement implies self-denial)
- v2rbq067 Exhibits physical discomfort or pain (High placement = in excess of what seems proportionate; Low placement implies lack of these signs where expected)

Details

Subjects are listed as Rows (N=205). RBQ items ([rbqv3.items](#)) (67 items)

Source

<http://psy2.fau.edu/~shermanr/index.html>

References

Sherman, R. A., Nave, C. S., & Funder, D. C. (2010). Situational similarity and personality predict behavioral consistency. *Journal of Personality and Social Psychology*, 99(2), 330-343

Examples

```
data(v2rbq)
head(v2rbq)
data(rbqv3.items)#lets look at the RBQ items
rbqv3.items
```

v3rbq

Situation 2 RBQ

Description

This is participants' self-ratings of their own behavior using the RBQ in the 2nd of 4 situations that they experienced.

Usage

```
data(v3rbq)
```

Format

A data frame with 205 observations on the following 67 variables.

v3rbq001 Interviews others (if present) (e.g., asks a series of questions)

v3rbq002 Volunteers a large amount of information about self

v3rbq003 Seems interested in what someone had to say (Disregard whether interest appears "genuine" or "polite")

v3rbq004 Tries to control the situation (Disregard whether attempts at control succeed or not)

v3rbq005 Dominates the situation (Disregard intention, e.g., if P dominates the situation "by default" because other(s) present do very little, this item should receive high placement)

v3rbq006 Appears to be relaxed and comfortable

v3rbq007 Exhibits social skills (e.g., does things to make other(s) comfortable, keeps conversation moving, entertains or charms other(s))

v3rbq008 Is reserved and unexpressive (e.g., expresses little affect; acts in a stiff, formal manner)

v3rbq009 Laughs frequently (Disregard whether laughter appears to be "nervous" or "genuine")

v3rbq010 Smiles frequently

v3rbq011 Is physically animated; moves around a great deal

v3rbq012 Seems to like other(s) present (e.g., would probably like to be friends with them)

v3rbq013 Exhibits an awkward interpersonal style (e.g., seems to have difficulty knowing what to say, mumbles, fails to respond to other(s)' conversational advances)

- v3rbq014 Compares self to other(s) (whether others are present or not)
- v3rbq015 Shows high enthusiasm and a high energy level
- v3rbq016 Shows a wide range of interests (e.g., talks about many topics)
- v3rbq017 Talks at rather than with other(s) (e.g., conducts a monologue, ignores what others say)
- v3rbq018 Expresses agreement frequently (High placement implies agreement is expressed unusually often, e.g., in response to each and every statement made. Low placement implies unusual lack of expression of agreement.)
- v3rbq019 Expresses criticism (of anybody or anything) (Low placement implies expresses praise)
- v3rbq020 Is talkative (as observed in this situation)
- v3rbq021 Expresses insecurity (e.g., seems touchy or overly sensitive)
- v3rbq022 Shows physical signs of tension or anxiety (e.g., fidgets nervously, voice wavers)(Lack of signs of anxiety = middle placement; low placement = lack of signs under circumstances where you would expect to see them)
- v3rbq023 Exhibits a high degree of intelligence (NB: At issue is what is displayed in the interaction not what may or may not be latent. Thus, give this item high placement only if P actually says or does something of high intelligence. Low placement implies exhibition of low intelligence; medium placement = no information one way or the other)
- v3rbq024 Expresses sympathy (to anyone, i.e., including conversational references)(Low placement implies unusual lack of sympathy)
- v3rbq025 Initiates humor
- v3rbq026 Seeks reassurance (e.g., asks for agreement, fishes for praise)
- v3rbq027 Exhibits condescending behavior (e.g., acts as if self is superior to others [present, or otherwise])(Low placement implies acting inferior)
- v3rbq028 Seems likable (to other(s) present)
- v3rbq029 Seeks advice
- v3rbq030 Appears to regard self as physically attractive
- v3rbq031 Acts irritated
- v3rbq032 Expresses warmth (to anyone, e.g., include any references to "my close friend," etc)
- v3rbq033 Tries to undermine, sabotage or obstruct
- v3rbq034 Expresses hostility (no matter toward whom or what)
- v3rbq035 Is unusual or unconventional in appearance
- v3rbq036 Behaves in a fearful or timid manner
- v3rbq037 Is expressive in face, voice or gestures
- v3rbq038 Expresses interest in fantasy or daydreams (Low placement only if such interest is explicitly disavowed)
- v3rbq039 Expresses guilt (about anything)
- v3rbq040 Keep other(s) at a distance; avoids development of any sort of interpersonal relationship (Low placement implies behavior to get close to other(s))
- v3rbq041 Shows interest in intellectual or cognitive matters (e.g., by discussing an intellectual idea in detail or with enthusiasm)

- v3rbq042 Seems to enjoy the situation
- v3rbq043 Says or does something interesting
- v3rbq044 Says negative things about self (e.g., is self-critical; expresses feelings of inadequacy)
- v3rbq045 Displays ambition (e.g., passionate discussion of career plans, course grades, opportunities to make money)
- v3rbq046 Blames others (for anything)
- v3rbq047 Expresses self-pity or feelings of victimization
- v3rbq048 Expresses sexual interest (e.g., acts attracted to someone present; expresses interest in dating or sexual matters in general)
- v3rbq049 Behaves in a cheerful manner
- v3rbq050 Gives up when faced with obstacles (Low placement implies unusual persistence)
- v3rbq051 Behaves in a stereotypically masculine/feminine style or manner (Apply the usual stereotypes appropriate to the P's sex. Low placement implies behavior stereotypical of the opposite sex)
- v3rbq052 Offers advice
- v3rbq053 Speaks fluently and expresses ideas well
- v3rbq054 Emphasizes accomplishments of self, family or acquaintances (Low placement = emphasizes failures of these individuals)
- v3rbq055 Behaves in a competitive manner (Low placement implies cooperative behavior)
- v3rbq056 Speaks in a loud voice
- v3rbq057 Speaks sarcastically (e.g., says things (s)he does not mean; makes facetious comments that are not necessarily funny)
- v3rbq058 Makes or approaches physical contact with other(s) (Of any sort, including sitting unusually close without touching) (Low placement implies unusual avoidance of physical contact, such as large interpersonal distance)
- v3rbq059 Engages in constant eye contact with someone (Low placement implies unusual lack of eye contact)
- v3rbq060 Seems detached from the situation
- v3rbq061 Speaks quickly (Low placement = speaks slowly)
- v3rbq062 Acts playful
- v3rbq063 Other(s) seek advice from P
- v3rbq064 Concentrates on/works hard at a task (Low placement implies loafing)
- v3rbq065 Engages in physical activity (e.g., works up a sweat)(Low placement = almost completely sedentary)
- v3rbq066 Acts in a self-indulgent manner (e.g., spending, eating, or drinking)(Low placement implies self-denial)
- v3rbq067 Exhibits physical discomfort or pain (High placement = in excess of what seems proportionate; Low placement implies lack of these signs where expected)

Details

Subjects are listed as Rows (N=205). RBQ items ([rbqv3.items](#)) (67 items)

Source

<http://psy2.fau.edu/~shermanr/index.html>

References

Sherman, R. A., Nave, C. S., & Funder, D. C. (2010). Situational similarity and personality predict behavioral consistency. *Journal of Personality and Social Psychology*, 99(2), 330-343

Examples

```
data(v3rbq)
head(v3rbq)
data(rbqv3.items)#lets look at the RBQ items
rbqv3.items
```

v4rbq

Situation 3 RBQ

Description

This is participants' self-ratings of their own behavior using the RBQ in the 3rd of 4 situations that they experienced.

Usage

```
data(v4rbq)
```

Format

A data frame with 205 observations on the following 67 variables.

v4rbq001 Interviews others (if present) (e.g., asks a series of questions)

v4rbq002 Volunteers a large amount of information about self

v4rbq003 Seems interested in what someone had to say (Disregard whether interest appears "genuine" or "polite")

v4rbq004 Tries to control the situation (Disregard whether attempts at control succeed or not)

v4rbq005 Dominates the situation (Disregard intention, e.g., if P dominates the situation "by default" because other(s) present do very little, this item should receive high placement)

v4rbq006 Appears to be relaxed and comfortable

v4rbq007 Exhibits social skills (e.g., does things to make other(s) comfortable, keeps conversation moving, entertains or charms other(s))

v4rbq008 Is reserved and unexpressive (e.g., expresses little affect; acts in a stiff, formal manner)

v4rbq009 Laughs frequently (Disregard whether laughter appears to be "nervous" or "genuine")

v4rbq010 Smiles frequently

v4rbq011 Is physically animated; moves around a great deal

- v4rbq012 Seems to like other(s) present (e.g., would probably like to be friends with them)
- v4rbq013 Exhibits an awkward interpersonal style (e.g., seems to have difficulty knowing what to say, mumbles, fails to respond to other(s)' conversational advances)
- v4rbq014 Compares self to other(s) (whether others are present or not)
- v4rbq015 Shows high enthusiasm and a high energy level
- v4rbq016 Shows a wide range of interests (e.g., talks about many topics)
- v4rbq017 Talks at rather than with other(s) (e.g., conducts a monologue, ignores what others say)
- v4rbq018 Expresses agreement frequently (High placement implies agreement is expressed unusually often, e.g., in response to each and every statement made. Low placement implies unusual lack of expression of agreement.)
- v4rbq019 Expresses criticism (of anybody or anything) (Low placement implies expresses praise)
- v4rbq020 Is talkative (as observed in this situation)
- v4rbq021 Expresses insecurity (e.g., seems touchy or overly sensitive)
- v4rbq022 Shows physical signs of tension or anxiety (e.g., fidgets nervously, voice wavers)(Lack of signs of anxiety = middle placement; low placement = lack of signs under circumstances where you would expect to see them)
- v4rbq023 Exhibits a high degree of intelligence (NB: At issue is what is displayed in the interaction not what may or may not be latent. Thus, give this item high placement only if P actually says or does something of high intelligence. Low placement implies exhibition of low intelligence; medium placement = no information one way or the other)
- v4rbq024 Expresses sympathy (to anyone, i.e., including conversational references)(Low placement implies unusual lack of sympathy)
- v4rbq025 Initiates humor
- v4rbq026 Seeks reassurance (e.g., asks for agreement, fishes for praise)
- v4rbq027 Exhibits condescending behavior (e.g., acts as if self is superior to others [present, or otherwise])(Low placement implies acting inferior)
- v4rbq028 Seems likable (to other(s) present)
- v4rbq029 Seeks advice
- v4rbq030 Appears to regard self as physically attractive
- v4rbq031 Acts irritated
- v4rbq032 Expresses warmth (to anyone, e.g., include any references to "my close friend," etc)
- v4rbq033 Tries to undermine, sabotage or obstruct
- v4rbq034 Expresses hostility (no matter toward whom or what)
- v4rbq035 Is unusual or unconventional in appearance
- v4rbq036 Behaves in a fearful or timid manner
- v4rbq037 Is expressive in face, voice or gestures
- v4rbq038 Expresses interest in fantasy or daydreams (Low placement only if such interest is explicitly disavowed)
- v4rbq039 Expresses guilt (about anything)

- v4rbq040 Keep other(s) at a distance; avoids development of any sort of interpersonal relationship (Low placement implies behavior to get close to other(s))
- v4rbq041 Shows interest in intellectual or cognitive matters (e.g., by discussing an intellectual idea in detail or with enthusiasm)
- v4rbq042 Seems to enjoy the situation
- v4rbq043 Says or does something interesting
- v4rbq044 Says negative things about self (e.g., is self-critical; expresses feelings of inadequacy)
- v4rbq045 Displays ambition (e.g., passionate discussion of career plans, course grades, opportunities to make money)
- v4rbq046 Blames others (for anything)
- v4rbq047 Expresses self-pity or feelings of victimization
- v4rbq048 Expresses sexual interest (e.g., acts attracted to someone present; expresses interest in dating or sexual matters in general)
- v4rbq049 Behaves in a cheerful manner
- v4rbq050 Gives up when faced with obstacles (Low placement implies unusual persistence)
- v4rbq051 Behaves in a stereotypically masculine/feminine style or manner (Apply the usual stereotypes appropriate to the P's sex. Low placement implies behavior stereotypical of the opposite sex)
- v4rbq052 Offers advice
- v4rbq053 Speaks fluently and expresses ideas well
- v4rbq054 Emphasizes accomplishments of self, family or acquaintances (Low placement = emphasizes failures of these individuals)
- v4rbq055 Behaves in a competitive manner (Low placement implies cooperative behavior)
- v4rbq056 Speaks in a loud voice
- v4rbq057 Speaks sarcastically (e.g., says things (s)he does not mean; makes facetious comments that are not necessarily funny)
- v4rbq058 Makes or approaches physical contact with other(s) (Of any sort, including sitting unusually close without touching) (Low placement implies unusual avoidance of physical contact, such as large interpersonal distance)
- v4rbq059 Engages in constant eye contact with someone (Low placement implies unusual lack of eye contact)
- v4rbq060 Seems detached from the situation
- v4rbq061 Speaks quickly (Low placement = speaks slowly)
- v4rbq062 Acts playful
- v4rbq063 Other(s) seek advice from P
- v4rbq064 Concentrates on/works hard at a task (Low placement implies loafing)
- v4rbq065 Engages in physical activity (e.g., works up a sweat)(Low placement = almost completely sedentary)
- v4rbq066 Acts in a self-indulgent manner (e.g., spending, eating, or drinking)(Low placement implies self-denial)
- v4rbq067 Exhibits physical discomfort or pain (High placement = in excess of what seems proportionate; Low placement implies lack of these signs where expected)

Details

Subjects are listed as Rows (N=205). RBQ items ([rbqv3.items](#)) (100 items)

Source

<http://psy2.fau.edu/~shermanr/index.html>

References

Sherman, R. A., Nave, C. S., & Funder, D. C. (2010). Situational similarity and personality predict behavioral consistency. *Journal of Personality and Social Psychology*, 99(2), 330-343

Examples

```
data(v4rbq)
head(v4rbq)
data(rbqv3.items)#lets look at the RBQ items
rbqv3.items
```

v5rbq

Situation 4 RBQ

Description

This is participants' self ratings of their own behavior using the RBQ in the 4th of 4 situations.

Usage

```
data(v5rbq)
```

Format

A data frame with 205 observations on the following 67 variables.

v5rbq001 Interviews others (if present) (e.g., asks a series of questions)

v5rbq002 Volunteers a large amount of information about self

v5rbq003 Seems interested in what someone had to say (Disregard whether interest appears "genuine" or "polite")

v5rbq004 Tries to control the situation (Disregard whether attempts at control succeed or not)

v5rbq005 Dominates the situation (Disregard intention, e.g., if P dominates the situation "by default" because other(s) present do very little, this item should receive high placement)

v5rbq006 Appears to be relaxed and comfortable

v5rbq007 Exhibits social skills (e.g., does things to make other(s) comfortable, keeps conversation moving, entertains or charms other(s))

v5rbq008 Is reserved and unexpressive (e.g., expresses little affect; acts in a stiff, formal manner)

- v5rbq009 Laughs frequently (Disregard whether laughter appears to be "nervous" or "genuine")
- v5rbq010 Smiles frequently
- v5rbq011 Is physically animated; moves around a great deal
- v5rbq012 Seems to like other(s) present (e.g., would probably like to be friends with them)
- v5rbq013 Exhibits an awkward interpersonal style (e.g., seems to have difficulty knowing what to say, mumbles, fails to respond to other(s)' conversational advances)
- v5rbq014 Compares self to other(s) (whether others are present or not)
- v5rbq015 Shows high enthusiasm and a high energy level
- v5rbq016 Shows a wide range of interests (e.g., talks about many topics)
- v5rbq017 Talks at rather than with other(s) (e.g., conducts a monologue, ignores what others say)
- v5rbq018 Expresses agreement frequently (High placement implies agreement is expressed unusually often, e.g., in response to each and every statement made. Low placement implies unusual lack of expression of agreement.)
- v5rbq019 Expresses criticism (of anybody or anything) (Low placement implies expresses praise)
- v5rbq020 Is talkative (as observed in this situation)
- v5rbq021 Expresses insecurity (e.g., seems touchy or overly sensitive)
- v5rbq022 Shows physical signs of tension or anxiety (e.g., fidgets nervously, voice wavers)(Lack of signs of anxiety = middle placement; low placement = lack of signs under circumstances where you would expect to see them)
- v5rbq023 Exhibits a high degree of intelligence (NB: At issue is what is displayed in the interaction not what may or may not be latent. Thus, give this item high placement only if P actually says or does something of high intelligence. Low placement implies exhibition of low intelligence; medium placement = no information one way or the other)
- v5rbq024 Expresses sympathy (to anyone, i.e., including conversational references)(Low placement implies unusual lack of sympathy)
- v5rbq025 Initiates humor
- v5rbq026 Seeks reassurance (e.g., asks for agreement, fishes for praise)
- v5rbq027 Exhibits condescending behavior (e.g., acts as if self is superior to others [present, or otherwise])(Low placement implies acting inferior)
- v5rbq028 Seems likable (to other(s) present)
- v5rbq029 Seeks advice
- v5rbq030 Appears to regard self as physically attractive
- v5rbq031 Acts irritated
- v5rbq032 Expresses warmth (to anyone, e.g., include any references to "my close friend," etc)
- v5rbq033 Tries to undermine, sabotage or obstruct
- v5rbq034 Expresses hostility (no matter toward whom or what)
- v5rbq035 Is unusual or unconventional in appearance
- v5rbq036 Behaves in a fearful or timid manner
- v5rbq037 Is expressive in face, voice or gestures

- v5rbq038 Expresses interest in fantasy or daydreams (Low placement only if such interest is explicitly disavowed)
- v5rbq039 Expresses guilt (about anything)
- v5rbq040 Keep other(s) at a distance; avoids development of any sort of interpersonal relationship (Low placement implies behavior to get close to other(s))
- v5rbq041 Shows interest in intellectual or cognitive matters (e.g., by discussing an intellectual idea in detail or with enthusiasm)
- v5rbq042 Seems to enjoy the situation
- v5rbq043 Says or does something interesting
- v5rbq044 Says negative things about self (e.g., is self-critical; expresses feelings of inadequacy)
- v5rbq045 Displays ambition (e.g., passionate discussion of career plans, course grades, opportunities to make money)
- v5rbq046 Blames others (for anything)
- v5rbq047 Expresses self-pity or feelings of victimization
- v5rbq048 Expresses sexual interest (e.g., acts attracted to someone present; expresses interest in dating or sexual matters in general)
- v5rbq049 Behaves in a cheerful manner
- v5rbq050 Gives up when faced with obstacles (Low placement implies unusual persistence)
- v5rbq051 Behaves in a stereotypically masculine/feminine style or manner (Apply the usual stereotypes appropriate to the P's sex. Low placement implies behavior stereotypical of the opposite sex)
- v5rbq052 Offers advice
- v5rbq053 Speaks fluently and expresses ideas well
- v5rbq054 Emphasizes accomplishments of self, family or acquaintances (Low placement = emphasizes failures of these individuals)
- v5rbq055 Behaves in a competitive manner (Low placement implies cooperative behavior)
- v5rbq056 Speaks in a loud voice
- v5rbq057 Speaks sarcastically (e.g., says things (s)he does not mean; makes facetious comments that are not necessarily funny)
- v5rbq058 Makes or approaches physical contact with other(s) (Of any sort, including sitting unusually close without touching) (Low placement implies unusual avoidance of physical contact, such as large interpersonal distance)
- v5rbq059 Engages in constant eye contact with someone (Low placement implies unusual lack of eye contact)
- v5rbq060 Seems detached from the situation
- v5rbq061 Speaks quickly (Low placement = speaks slowly)
- v5rbq062 Acts playful
- v5rbq063 Other(s) seek advice from P
- v5rbq064 Concentrates on/works hard at a task (Low placement implies loafing)
- v5rbq065 Engages in physical activity (e.g., works up a sweat)(Low placement = almost completely sedentary)

v5rbq066 Acts in a self-indulgent manner (e.g., spending, eating, or drinking)(Low placement implies self-denial)

v5rbq067 Exhibits physical discomfort or pain (High placement = in excess of what seems proportionate; Low placement implies lack of these signs where expected)

Details

Subjects are listed as Rows (N=205). RBQ items ([rbqv3.items](#)) (100 items)

Source

<http://psy2.fau.edu/~shermanr/index.html>

References

Sherman, R. A., Nave, C. S., & Funder, D. C. (2010). Situational similarity and personality predict behavioral consistency. *Journal of Personality and Social Psychology*, 99(2), 330-343

Examples

```
data(v5rbq)
head(v5rbq)
data(rbqv3.items)#lets look at the RBQ items
rbqv3.items
```

valid.pairs

Valid Pairs

Description

Returns information about the number of valid X-Y pairs.

Usage

```
valid.pairs(x, y)
```

Arguments

x A vector of the same length as 'y'
y A vector of the same length as 'x'

Details

This function returns the total number of X-Y pairs, the number of X-Y pairs with at least one of the pairs missing a value, the number of X-Y pairs without either pair missing, and the percentage of total pairs that do not have either pair missing. Called by the Profile.r function.

Value

A list containing the following:

Tot	The total number of X-Y pairs
Miss	The total number of X-Y pairs with at least one value missing
Valid	The total number of X-Y pairs with neither value missing
Pct	The percentage of X-Y pairs with neither value missing

Author(s)

Ryne A. Sherman

See Also

[Profile.r](#)

Examples

```
# Making some data
x.vect <- rnorm(100, m=0, sd=.5)
y.vect <- rnorm(100, m=0, sd=.5)
#checking valid pairs
valid.pairs(x.vect,y.vect)
#making some missing data
x.vect[1:5] <- NA
y.vect[95:100] <- NA
#now checking valid pairs
valid.pairs(x.vect,y.vect)
```

vector.alpha

Alpha Replicability of a Vector (pattern) of Correlations

Description

A function for compute the alpha replicability of a vector of linear coefficients (e.g. correlations, covariances) between a single variable (x) and a set of other variables (set).

Usage

```
vector.alpha(x, set, type = "cor", CI = 0.95, CItpe = "xci", minval = -1)
```

Arguments

x	A numeric vector of the same length as nrow(set).
set	A data.frame or matrix of which each column is to be related with x.
type	A character string specifying the type of linear coefficients between x and set to be computed. The default "cor" computes the replicability for the correlations between x and set. The option "cov" computes the replicability for covariances. The option "XY" computes the replicability for the betas when X predicts Y. The option "YX" computes the replicability for the betas when Y predicts X.
CI	A numeric between .00 and 1.00 indicating the desired confidence level.
CItype	A character string of either "xci" or "aci" specifying the the type of confidence interval to compute based on Koning & Franses (2003).
minval	A numeric indicating the minimum level of replicability to be returned.

Details

Sherman and Wood (2014) suggest that one way to estimate the replicability of a vector of correlation coefficients between a variable of interest (x) and a set of other variables (set) is to 1) Z-score all variables, 2) multiply the Z-scored variable of interest by the Z-scores for each of the variables in set, 3) transpose the resultant matrix of cross-products and compute cronbach's alpha on this matrix. This function does just that and includes options for getting replicability coefficients for regression slopes and covariances.

Value

N	The sample size
Average R	The average magnitude of correlations between x and set
Alpha	The estimated alpha reliability
Upper Limit	The Upper Limit of the CI around the split-half reliability
Lower Limit	The Lower Limit of the CI around the split-half reliability

Author(s)

Ryne A. Sherman

References

Sherman, R. A. & Wood, D. (2014). Estimating the expected replicability of a pattern of correlations and other measures of association. *Multivariate Behavioral Research*. 49(1), 17-40. Koning, A. J. & Franses, P. H. (2003). Confidence Intervals for Cronbach's Alpha Coefficient values. ERIM Report Series Reference No. ERS-2003-041-MKT. Available at SSRN: <http://ssrn.com/abstract=423658>

See Also

[vector.splithalf splithalf.r](#)

Examples

```

data(RSPdata)
# Is the pattern of relationships between self reported
#extraversion and behavior replicable?
RSPdata$EXT
data(beh.comp)
head(beh.comp)
vector.alpha(RSPdata$EXT, beh.comp) #alpha = .666
# Might also try vector.splithalf
vector.splithalf(RSPdata$EXT,beh.comp) # split-half reliability = .684

```

vector.splithalf *Split-half Repicability of a Vector (pattern) of Correlations*

Description

Computes the split-half replicability of the vector of linear coefficients (e.g. correlations, covariances) between a single variable (x) and a set of other variables (set).

Usage

```

vector.splithalf(x, set, typ = "cor", sims = 100,
graph = TRUE, CI = 0.95, minval = -1, seed = 2)

```

Arguments

x	A numeric vector of the same length as nrow(set).
set	A data.frame or matrix of which each column is to be related with x.
typ	A character string specifying the type of linear coefficients between x and set to be computed. The default "cor" computes the replicability for the correlations between x and set. The option "XY" computes the replicability for the betas when X predicts Y. The option "YX" computes the replicability for the betas when Y predicts X. The option "betas" computes the replicabilities for both X predicting Y and Y predicting X. Finally, the option "all" computes the replicability for the correlations and the betas.
sims	A numeric specifying the number of random splithalves to generate to estimate the true splithalf replicability.
graph	A logical indicating whether a graph displaying the the random splithalf values should be printed.
CI	A numeric between 0.0 and 1.0 indicating the desired confidence interval for the estimated replicability coefficient.
minval	A numeric indicating the minimum replicability value allowed.
seed	A numeric specifying the random seed to be used. If set to FALSE, no seed is used.

Details

Sherman and Wood (2014) suggest that one way to estimate the replicability of a vector of correlation coefficients between a variable of interest (x) and a set of other variables (set) is to 1) divide one's sample into two equal halves, 2) compute the the correlations between 'x' and 'set' for both samples, 3) compute the correlation between the two resultant vectors of correlations, and 4) adjust the resultant split-sample correlation up using the spearman-brown prophecy formula. This function repeats this procedure "sims" times and returns the average result along with confidence intervals. In addition, this function includes options for getting a replicability coefficient for regression slopes (betas).

Value

N	The sample size
Split-half r	The estimated split-half reliability
SE	Standard Error of the estimate
Lower Limit	The Lower Limit of the CI around the split-half reliability
Upper Limit	The Upper Limit of the CI around the split-half reliability

Author(s)

Ryne A. Sherman

References

Sherman, R. A. & Wood, D. (2014). Estimating the expected replicability of a pattern of correlations and other measures of association. *Multivariate Behavioral Research*. 49(1), 17-40.

See Also

[vector.alpha.splithalf.r](#)

Examples

```
data(RSPdata)
data(beh.comp)
# Is the pattern of relationships between self reported extraversion and behavior replicable
RSPdata$sEXT
head(beh.comp)
vector.splithalf(RSPdata$sEXT, beh.comp) #split-half reliability = .684
# Might also compare with vector.alpha
vector.alpha(RSPdata$sEXT, beh.comp) #alpha = .665
```

winvar	<i>Winsorized Variance</i>
--------	----------------------------

Description

Returns the winsorized variance of x.

Usage

```
winvar(x, tr = .2, na.rm = TRUE)
```

Arguments

x	A numeric vector of which to get the winsorized variance
tr	The proportion of scores to winsorize
na.rm	A logical indicating whether missing values should be removed prior to calculation.

Details

This function is borrowed directly from the WRS package.

Value

Returns the winsorized variance of x based on tr percente winsorizing.

Author(s)

Ryne A Sherman

See Also

[var](#)

Examples

```
x <- rnorm(20)
var(x)
winvar(x)
```

yuenContrast

Generalized Yuen's T-tests

Description

Computes a t-test for multiple groups using a generalization of Yuen's (1974) method for trimmed t-tests. In the case of $K > 2$ groups, a t-contrast use calculated based on the given contrast weights.

Usage

```
yuenContrast(IV, ...)

## Default Method
## Default S3 method:
yuenContrast(IV, DV, wgt = c(1, -1), tr = .2,
alpha = .05, EQVAR = FALSE, alternative = "unequal", ...)

## Method for class 'formula'
## S3 method for class 'formula'
yuenContrast(formula, data = NULL, wgt = c(1, -1), tr = .2,
alpha = .05, EQVAR = FALSE, alternative = "unequal", ...)
```

Arguments

IV	A factor of the same length as DV containing the independent variable codes.
DV	A numeric vector of the same length as IV containing the measured values.
formula	A formula of the form lhs ~ rhs where lhs is a numeric vector containing the data values and rhs is a variable containing the corresponding groups.
data	An optional data frame containing the variables in the formula.
wgt	A numeric vector containing the contrast weights corresponding to each successive level of the IV. Defaults to c(1, -1), implying that the first group is expected to have a higher mean than the second.
tr	A numeric element between .00 and < .50 specifying the amount of trimming to be used.
alpha	A numeric element > .00 and < 1.00 specifying the Type I error rate.
EQVAR	A logical indicating whether equal variances amongst the groups should be assumed. Defaults to FALSE (Yuen's Method).
alternative	A character vector specifying the alternative hypothesis. Must be one of "unequal", "greater", or "less".
...	Further arguments to be passed to or from methods.

Details

This function computes a t-value based on Yuen's (1974) method for calculating T for trimmed means if `tr` is greater than 0 and Welch's method for `tr=0` and `EQVAR=FALSE`. The `wgt` option allows one to specify contrast weights to test hypotheses with more than 2 levels of an IV. By default it tests the hypothesis that two means are unequal. If a directional hypothesis is known ahead of time, use "greater" to predict that higher contrast weights have higher means and "less" to predict the opposite. A robust measure of the mean differences or the contrast is obtained by using some level of trimming. By setting the `EQVAR` option to `TRUE` degrees of freedom are consistent with Student's method. If `EQVAR` is `FALSE` (default) then degrees of freedom are calculated using the Welch-Satterthwaite approximation. The entire family of possible T-test equations can be found here:

<http://rynesherman.com/T-Family.doc>

Value

A list containing...

<code>Ms</code>	A data.frame with the sample size, mean, and weight for each group.
<code>test</code>	A data.frame with the test statistic (<code>stat</code>), the degrees of freedom (<code>df</code>), the critical value for the test statistic (<code>crit</code>), and the p-value

Author(s)

Ryne A. Sherman

References

Yuen, K. K. (1974). The two-sample trimmed t for unequal population variances. *Biometrika*, 61, 165-170. Student (1908). The probable error of a mean. *Bimetrika*, 6, 1-25.

See Also

[winvar](#) [t.test](#) [tContrast](#)

Examples

```
dv <- c(rnorm(30, mean=1, sd=2), rnorm(20))
iv <- c(rep(1,30),rep(2,20))

# Student's t-test (assuming equal variances)
t.test(dv ~ iv, var.equal=TRUE)
# Welch's t-test (not assuming equal variance)
t.test(dv ~ iv, var.equal=FALSE)
# Yuen's t-test with 20% trimming assuming equal variances
yuenContrast(iv, dv, EQVAR=TRUE)
# Yuen's t-test with 20% trimming not assuming equal variances
yuenContrast(iv, dv, EQVAR=FALSE)
# Same as Student's t-test using yuenContrast
yuenContrast(iv, dv, EQVAR=TRUE, tr=0)
# Same as Welch's t-test using yuenContrast
```

```
yuenContrast(iv, dv, EQVAR=FALSE, tr=0)

# Contrast with 3 Groups
dv <- c(rnorm(30), rnorm(20, mean=-.5), rnorm(10, mean=-1))
iv <- c(rep("c",30), rep("b", 20), rep("a", 10))
# With no trimming (t-contrast with Welch-Sattertwate DFs)
yuenContrast(iv, dv, wgt=c(1, 0, -1), tr=0)
# With 20% trimming
yuenContrast(iv, dv, wgt=c(1, 0, -1), tr=.2)
# With the formula method
yuenContrast(dv ~ iv, wgt = c(1, 0, -1))
```

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