

# Package ‘persval’

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**Type** Package

**Title** Computing Personal Values Scores

**Version** 1.1.1

**Description** Compute personal values scores from various questionnaires based on the theoretical constructs proposed by professor Shalom H. Schwartz. Designed for researchers and practitioners in psychology, sociology, and related fields, the package facilitates the quantification and visualization of different dimensions related to personal values from survey data. It incorporates the recommended statistical adjustment to enhance the accuracy and interpretation of the results.

Note: The package ‘persval’ is independently developed based on the personal values theoretical framework, and is not directly endorsed by professor Schwartz.

**URL** <https://github.com/g-corbelli/persval>

**BugReports** <https://github.com/g-corbelli/persval/issues>

**License** GPL-3

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## Contents

fourvalplot . . . . .	2
persval . . . . .	3
pvq21 . . . . .	5
pvq40 . . . . .	6
svs . . . . .	8
tentralplot . . . . .	9
tivi . . . . .	11
twivi . . . . .	12

<b>Index</b>	<b>14</b>
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fourvalplot	<i>Plot spider chart for four higher-order personal values</i>
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### Description

This function generates a spider chart based on four higher-order Basic Human Values: Openness to Change, Self-Enhancement, Conservation, and Self-Transcendence. This visualization helps in understanding the profile of higher-order values for individuals or groups.

### Usage

```
fourvalplot(
  df,
  valueMap,
  instrument,
  corrected = TRUE,
  standdev = TRUE,
  na.rm = TRUE
)
```

### Arguments

df	A dataframe containing computed values for the four higher-order personal values.
valueMap	A named vector where names are the four higher-order personal values: Openness to Change ("OPEN"), Self-enhancement ("SELFENH"), Conservation ("CONS"), Self-transcendence ("SELFTRANS"). Vector values correspond to the column names in the dataframe.
instrument	Character string specifying the type of instrument used. Supported instruments: "svs", "pvq40", "pvq21", "twivi", "tivi".
corrected	Logical. Indicates if data are ipsatized; if FALSE, data are given as raw scores (variable ranges depending on the type of instrument used). Default is TRUE.
standdev	Logical. When TRUE, plots mean $\pm$ SD lines; when FALSE, plots only the mean. Default is TRUE.

`na.rm` Logical. When TRUE, NAs are ignored; when FALSE, NAs are preserved and will affect calculations. Default is TRUE.

### Value

A spider chart visualizing the four higher-order values scores.

### Examples

```
df <- data.frame(  
  open_comp = sample(-4.5:+4.5, 3, replace = TRUE),  
  selfenh_comp = sample(-4.5:+4.5, 3, replace = TRUE),  
  cons_comp = sample(-4.5:+4.5, 3, replace = TRUE),  
  selftrans_comp = sample(-4.5:+4.5, 3, replace = TRUE))  
valueMap <- c(OPEN = "open_comp", SELFENH = "selfenh_comp",  
             CONS = "cons_comp", SELFTRANS = "selftrans_comp")  
persval::fourvalplot(df = df, valueMap = valueMap, instrument = "pvq40")
```

### Description

The `persval` package provides functions for computing personal values scores from various questionnaires based on the theoretical constructs proposed by Schwartz (Schwartz, 1992, 1996, 2015; Schwartz et al., 2017). Designed to assist researchers and practitioners in psychology, sociology, and related fields, the package facilitates the quantification of different dimensions related to personal values from survey data and the graphical representation of their relative importance. It incorporates the recommended statistical adjustment (ipsatization) to enhance the accuracy and interpretation of the results.

### Details

Supported questionnaires within the package include:

- `svs`: the Schwartz Value Survey (SVS-57), comprising 57 items measured on a 9-point Likert-type scale, ranging from -1 to 7 (Schwartz, 1992).
- `pvq40`: the Portrait Values Questionnaire (PVQ-40), comprising 40 items measured on a 6-point Likert scale, ranging from 1 to 6 (Schwartz, 2006; Schwartz et al., 2001).
- `pvq21`: the shortened version of PVQ used in the European Social Survey (PVQ-21/ESS-21), comprising 21 items measured on a 6-point Likert scale, ranging from 1 to 6 (Schwartz, 2003).
- `twivi`: the Twenty Item Values Inventory (TwIVI), comprising 20 items measured on a 6-point Likert scale, ranging from 1 to 6 (Sandy et al., 2017).
- `tivi`: the Ten Item Values Inventory (TIVI), comprising 10 items measured on a 6-point Likert scale, ranging from 1 to 6 (Sandy et al., 2017).

The package includes functions to generate spider charts that graphically depict the relative importance of each of the ten basic personal values and the four higher order values, making it easier to present, interpret, and confront visually an individual's or group's value orientation:

- `tensvalplot`: Function to plot spider charts for ten basic personal values.
- `fourvalplot`: Function to plot spider charts for four higher order personal values.

### Note

This package is independently developed based on Schwartz's theoretical framework and is not directly endorsed by Professor Schwartz. Researchers are advised to consult the original studies and validation articles for comprehensive insights into the theoretical and empirical basis of the instruments used (e.g.: Closs, 1996; Cornwell & Dunlop, 1994; Rudnev, 2021; Saris, 1988; Schwartz, 1992, 1996, 2015; Schwartz et al., 2017; Smith, 2004; Van Rosmalen et al., 2010).

### Author(s)

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### See Also

Useful links:

- <https://github.com/g-corbelli/persval>
- Report bugs at <https://github.com/g-corbelli/persval/issues>

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pvq21

*Compute personal values from PVQ-21/ESS21 data*

---

### Description

This function computes personal values scores and different higher-order dimensions related to Schwartz's theoretical framework based on the 21 items of the PVQ-21 European Social Survey Value Scale (Schwartz, 2003). By default, the function applies the recommended statistical adjustment (MRAT centering) as suggested by the authors, to correct for individual differences in response styles thus enhancing the interpretative validity of the scores.

### Usage

```
pvq21(
  df,
  items = NULL,
  compute = "all",
  correction = TRUE,
  na.rm = TRUE
)
```

### Arguments

- |       |  |
|-------|--|
| df    | A Data frame containing the raw responses for the 21 PVQ items. If "items" is not provided, it must have exactly 21 columns, and their order must correspond to the PVQ-21 items.  |
| items | An optional vector containing the names or indices of the columns that correspond to the PVQ-21 items. Must be exactly 21 items. If NULL, the function assumes the items are the only columns given in the "df" parameter. |

compute	Character. Indicates which personal values scores to compute and return. Possible values are "all" (default; computes all first and second-order personal values scores), "ten.values" (computes the ten basic personal values scores), "four.higher" (computes the four main higher-order values scores), "two.foci" (computes two higher-order values scores: self-focused values that regulate personal interests and characteristics, and other-focused values that regulate social relationships), "two.anxiety" (computes two higher-order values based on their relation to anxiety: self-protective values aimed at coping with anxiety due to uncertainty in the social and physical world, and growth-oriented or self-expansive values that express anxiety-free motivations).
correction	Logical. When TRUE, the scores are corrected for individual differences in the use of the response scale. Default is TRUE.
na.rm	Logical. When TRUE, NAs are ignored in calculations; when FALSE, NAs are preserved and will affect calculations. Default is TRUE.

### Value

A data frame with computed values. If both "df" and "items" parameters are provided, the returned data frame includes the original data with the calculations appended as new columns.

### Note

Developed by Giuseppe Corbelli, email: [giuseppe.corbelli@uninettunouniversity.net](mailto:giuseppe.corbelli@uninettunouniversity.net), [giuseppe.corbelli@uniroma1.it](mailto:giuseppe.corbelli@uniroma1.it)

### Examples

```
persval::pvq21(df = data.frame(
  pvq1 = c(3, 1, 4), pvq2 = c(2, 5, 3), pvq3 = c(1, 5, 2), pvq4 = c(4, 3, 5),
  pvq5 = c(5, 2, 1), pvq6 = c(3, 4, 2), pvq7 = c(1, 2, 4), pvq8 = c(3, 1, 5),
  pvq9 = c(2, 4, 1), pvq10 = c(5, 3, 2), pvq11 = c(1, 4, 3), pvq12 = c(2, 1, 5),
  pvq13 = c(3, 5, 4), pvq14 = c(1, 2, 3), pvq15 = c(4, 5, 1), pvq16 = c(2, 3, 4),
  pvq17 = c(5, 1, 2), pvq18 = c(3, 4, 1), pvq19 = c(2, 3, NA), pvq20 = c(1, 3, 4),
  pvq21 = c(2, 5, 1)),
  correction = TRUE,
  compute = "all",
  na.rm = TRUE)
```

---

pvq40

*Compute personal values from PVQ-40 data*

---

### Description

This function computes personal values scores and different higher-order dimensions related to Schwartz's theoretical framework based on the 40 items of the PVQ-40 Value Scale (Schwartz, 2006; Schwartz et al., 2001). By default, the function applies the recommended statistical adjustment (MRAT centering) as suggested by the authors, to correct for individual differences in response styles thus enhancing the interpretative validity of the scores.

**Usage**

```
pvq40(
  df,
  items = NULL,
  compute = "all",
  correction = TRUE,
  na.rm = TRUE
)
```

**Arguments**

df	A Data frame containing the raw responses for the 40 PVQ items. If "items" is not provided, it must have exactly 40 columns, and their order must correspond to the PVQ-40 items.
items	An optional vector containing the names or indices of the columns that correspond to the PVQ-40 items. Must be exactly 40 items. If NULL, the function assumes the items are the only columns given in the "df" parameter.
compute	Character. Indicates which personal values scores to compute and return. Possible values are "all" (default; computes all first and second-order personal values scores), "ten.values" (computes the ten basic personal values scores), "four.higher" (computes the four main higher-order values scores), "two.foci" (computes two higher-order values scores: self-focused values that regulate personal interests and characteristics, and other-focused values that regulate social relationships), "two.anxiety" (computes two higher-order values based on their relation to anxiety: self-protective values aimed at coping with anxiety due to uncertainty in the social and physical world, and growth-oriented or self-expansive values that express anxiety-free motivations).
correction	Logical. When TRUE, the scores are corrected for individual differences in the use of the response scale. Default is TRUE.
na.rm	Logical. When TRUE, NAs are ignored in calculations; when FALSE, NAs are preserved and will affect calculations. Default is TRUE.

**Value**

A data frame with computed values. If both "df" and "items" parameters are provided, the returned data frame includes the original data with the calculations appended as new columns.

**Note**

Developed by Giuseppe Corbelli, email: [giuseppe.corbelli@uninettunouniversity.net](mailto:giuseppe.corbelli@uninettunouniversity.net), [giuseppe.corbelli@uniroma1.it](mailto:giuseppe.corbelli@uniroma1.it)

**Examples**

```
persval::pvq40(df = data.frame(
  pvq1 = c(3, 1, 4), pvq2 = c(2, 5, 3), pvq3 = c(1, 5, 2), pvq4 = c(4, 3, 5),
  pvq5 = c(5, 2, 1), pvq6 = c(3, 4, 2), pvq7 = c(1, 2, 4), pvq8 = c(3, 1, 5),
  pvq9 = c(2, 4, 1), pvq10 = c(5, 3, 2), pvq11 = c(1, 4, 3), pvq12 = c(2, 1, 5),
  pvq13 = c(3, 5, 4), pvq14 = c(1, 2, 3), pvq15 = c(4, 5, 1), pvq16 = c(2, 3, 4),
```

```

pvq17 = c(5, 1, 2), pvq18 = c(3, 4, 1), pvq19 = c(2, 3, NA), pvq20 = c(1, 3, 4),
pvq21 = c(2, 5, 1), pvq22 = c(4, 1, 5), pvq23 = c(3, 4, 2), pvq24 = c(5, 1, 3),
pvq25 = c(4, 2, 5), pvq26 = c(1, 3, 2), pvq27 = c(5, 4, 1), pvq28 = c(2, 1, 4),
pvq29 = c(3, 5, 2), pvq30 = c(1, 4, 3), pvq31 = c(2, 3, 5), pvq32 = c(4, 1, NA),
pvq33 = c(3, 5, 4), pvq34 = c(1, 2, 3), pvq35 = c(4, 1, 5), pvq36 = c(2, 3, 4),
pvq37 = c(5, 2, 1), pvq38 = c(4, 3, 2), pvq39 = c(1, 5, 3), pvq40 = c(2, 4, 1)),
correction = TRUE,
compute = "all",
na.rm = TRUE)

```

svs

*Compute personal values from SVS-57 data*

### Description

This function computes personal values scores and different higher-order dimensions related to Schwartz's theoretical framework based on the 57 items of the Schwartz Value Survey (Schwartz, 1992). By default, the function applies the recommended statistical adjustment (MRAT centering) as suggested by the authors, to correct for individual differences in response styles thus enhancing the interpretative validity of the scores.

### Usage

```

svs(
  df,
  items = NULL,
  compute = "all",
  correction = TRUE,
  na.rm = TRUE
)

```

### Arguments

df	A data frame containing the raw responses for the SVS items. If "items" is not provided, it must have exactly 57 columns, and their order must correspond to the SVS items.
items	An optional vector containing the names or indices of the columns that correspond to the SVS items. Must be exactly 57 items. If NULL, the function assumes the items are the only columns given in the "df" parameter.
compute	Character. Indicates which personal values scores to compute and return. Possible values are "all" (default; computes all first and second-order personal values scores), "ten.values" (computes the ten basic personal values scores), "four.higher" (computes the four main higher-order values scores), "two.foci" (computes two higher-order values scores: self-focused values that regulate personal interests and characteristics, and other-focused values that regulate social relationships), "two.anxiety" (computes two higher-order values based on their relation to anxiety: self-protective values aimed at coping with anxiety due to uncertainty in



	the social and physical world, and growth-oriented or self-expansive values that express anxiety-free motivations).
correction	Logical. When TRUE, the scores are corrected for individual differences in the use of the response scale. Default is TRUE.
na.rm	Logical. When TRUE, NAs are ignored in calculations; when FALSE, NAs are preserved and will affect calculations. Default is TRUE.

### Value

A data frame with computed values. If both "df" and "items" parameters are provided, the returned data frame includes the original data with the calculations appended as new columns.

### Note

Developed by Giuseppe Corbelli, email: [giuseppe.corbelli@uninettunouniversity.net](mailto:giuseppe.corbelli@uninettunouniversity.net), [giuseppe.corbelli@uniroma1.it](mailto:giuseppe.corbelli@uniroma1.it)

### Examples

```
persval::svs(df = data.frame(
  sv1 = c(3, 1, 4), sv2 = c(2, 5, 3), sv3 = c(1, 5, 2), sv4 = c(4, 3, 5),
  sv5 = c(5, 2, 1), sv6 = c(3, 4, 2), sv7 = c(1, 2, 4), sv8 = c(3, 1, 5),
  sv9 = c(2, 4, 1), sv10 = c(5, 3, 2), sv11 = c(1, 4, 3), sv12 = c(2, 1, 5),
  sv13 = c(3, 5, 4), sv14 = c(1, 2, 3), sv15 = c(4, 5, 1), sv16 = c(2, 3, 4),
  sv17 = c(5, 1, 2), sv18 = c(3, 4, 1), sv19 = c(2, 3, NA), sv20 = c(1, 3, 4),
  sv21 = c(2, 5, 1), sv22 = c(4, 1, 5), sv23 = c(3, 4, 2), sv24 = c(5, 1, 3),
  sv25 = c(4, 2, 5), sv26 = c(1, 3, 2), sv27 = c(5, 4, 1), sv28 = c(2, 1, 4),
  sv29 = c(3, 5, 2), sv30 = c(1, 4, 3), sv31 = c(2, 3, 5), sv32 = c(4, 1, NA),
  sv33 = c(3, 5, 4), sv34 = c(1, 2, 3), sv35 = c(4, 1, 5), sv36 = c(2, 3, 4),
  sv37 = c(5, 2, 1), sv38 = c(4, 3, 2), sv39 = c(1, 5, 3), sv40 = c(2, 4, 1),
  sv41 = c(5, 1, 2), sv42 = c(3, 2, 4), sv43 = c(2, 5, 3), sv44 = c(4, 1, 5),
  sv45 = c(3, 2, 4), sv46 = c(1, 5, 3), sv47 = c(4, 3, 2), sv48 = c(5, 1, 2),
  sv49 = c(3, 4, 1), sv50 = c(2, 5, NA), sv51 = c(1, 4, 3), sv52 = c(2, 1, 5),
  sv53 = c(3, 5, 4), sv54 = c(1, 2, 3), sv55 = c(4, 5, 1), sv56 = c(2, 3, 4),
  sv57 = c(5, 1, 2)),
  correction = TRUE,
  compute = "all",
  na.rm = TRUE)
```

---

tenvalplot

*Plot spider chart for ten specific personal values*

---

### Description

This function generates a spider chart based on the Basic Human Values. It requires exactly ten value categories corresponding to the 10 predefined personal values. This visualization helps in understanding the individual or average profile of personal values.

**Usage**

```
tenvalplot(
  df,
  valueMap,
  instrument,
  corrected = TRUE,
  standdev = TRUE,
  na.rm = TRUE
)
```

**Arguments**

<code>df</code>	A dataframe containing computed values for the ten basic human values.
<code>valueMap</code>	A named vector where names correspond to the ten personal values: Conformity ("CO"), Tradition ("TR"), Benevolence ("BE"), Achievement ("AC"), Power ("PO"), Security ("SE"), Stimulation ("ST"), Self-direction ("SD"), Universalism ("UN"), Hedonism ("HE"). Vector values correspond to the column names in the dataframe.
<code>instrument</code>	Character string specifying the type of instrument used. Supported instruments: "svs", "pvq40", "pvq21", "twivi", "tivi".
<code>corrected</code>	Logical. Indicates if data are ipsatized; if FALSE, data are given as raw scores (variable ranges depending on the type of instrument used). Default is TRUE.
<code>standdev</code>	Logical. When TRUE, plots mean $\pm$ SD lines; when FALSE, plots only the mean. Default is TRUE.
<code>na.rm</code>	Logical. When TRUE, NAs are ignored; when FALSE, NAs are preserved and will affect calculations. Default is TRUE.

**Value**

A spider chart visualizing the ten basic human values scores.

**Examples**

```
df <- data.frame(
  conf_comp = sample(1:6, 3, replace = TRUE),
  trad_comp = sample(1:6, 3, replace = TRUE),
  bene_comp = sample(1:6, 3, replace = TRUE),
  achie_comp = sample(1:6, 3, replace = TRUE),
  power_comp = sample(1:6, 3, replace = TRUE),
  sec_comp = sample(1:6, 3, replace = TRUE),
  stim_comp = sample(1:6, 3, replace = TRUE),
  selfdir_comp = sample(1:6, 3, replace = TRUE),
  univ_comp = sample(1:6, 3, replace = TRUE),
  hedo_comp = sample(1:6, 3, replace = TRUE))
valueMap <- c(CO = "conf_comp", TR = "trad_comp",
              BE = "bene_comp", AC = "achie_comp",
              PO = "power_comp", SE = "sec_comp",
              ST = "stim_comp", SD = "selfdir_comp",
```

```

      UN = "univ_comp", HE = "hedo_comp")
persval::tenvalplot(df = df, valueMap = valueMap, instrument = "pvq40",
corrected = FALSE)

```

---

tivi

---

*Compute personal values from TIVI data*


---

## Description

This function computes personal values scores and different higher-order dimensions related to Schwartz's theoretical framework based on the 10 items of the ultra-brief TIVI Questionnaire (Sandy et al., 2017). By default, the function applies the recommended statistical adjustment (MRAT centering) as suggested by the authors, to correct for individual differences in response styles thus enhancing the interpretative validity of the scores.

## Usage

```

tivi(
  df,
  items = NULL,
  compute = "all",
  correction = TRUE,
  na.rm = TRUE
)

```

## Arguments

df	A data frame containing the raw responses for the 10 TIVI items. If "items" is not provided, it must have exactly 10 columns, and their order must correspond to the TIVI items.
items	An optional vector containing the names or indices of the columns that correspond to the TIVI items. Must be exactly 10 items. If NULL, the function assumes the items are the only columns given in the "df" parameter.
compute	Character. Indicates which personal values scores to compute and return. Possible values are "all" (default; computes all first and second-order personal values scores), "ten.values" (computes the ten basic personal values scores), "four.higher" (computes the four main higher-order values scores), "two.foci" (computes two higher-order values scores: self-focused values that regulate personal interests and characteristics, and other-focused values that regulate social relationships), "two.anxiety" (computes two higher-order values based on their relation to anxiety: self-protective values aimed at coping with anxiety due to uncertainty in the social and physical world, and growth-oriented or self-expansive values that express anxiety-free motivations).
correction	Logical. When TRUE, the scores are corrected for individual differences in the use of the response scale. Default is TRUE.
na.rm	Logical. When TRUE, NAs are ignored in calculations; when FALSE, NAs are preserved and will affect calculations. Default is TRUE.

**Value**

A data frame with computed values. If both "df" and "items" parameters are provided, the returned data frame includes the original data with the calculations appended as new columns.

**Note**

Developed by Giuseppe Corbelli, email: giuseppe.corbelli@uninettunouniversity.net, giuseppe.corbelli@uniroma1.it

**Examples**

```
persval::twivi(df = data.frame(
  tivi1 = c(3, 1, 4), tivi2 = c(2, 5, 3), tivi3 = c(1, 5, 2),
  tivi4 = c(4, 3, 5), tivi5 = c(5, 2, 1), tivi6 = c(3, 4, 2), tivi7 = c(1, 2, 4),
  tivi8 = c(3, 1, 5), tivi9 = c(2, 4, 1), tivi10 = c(5, 3, 2)),
  correction = TRUE,
  compute = "all",
  na.rm = TRUE)
```

---

twivi

---

*Compute personal values from TwIVI data*


---

**Description**

This function computes personal values scores and different higher-order dimensions related to Schwartz's theoretical framework based on the 20 items of the TwIVI Questionnaire (Sandy et al., 2017). By default, the function applies the recommended statistical adjustment (MRAT centering) as suggested by the authors, to correct for individual differences in response styles thus enhancing the interpretative validity of the scores.

**Usage**

```
twivi(
  df,
  items = NULL,
  compute = "all",
  correction = TRUE,
  na.rm = TRUE
)
```

**Arguments**

df	A Data frame containing the raw responses for the 20 TwIVI items. If "items" is not provided, it must have exactly 20 columns, and their order must correspond to the TwIVI items.
items	An optional vector containing the names or indices of the columns that correspond to the TwIVI items. Must be exactly 20 items. If NULL, the function assumes the items are the only columns given in the "df" parameter.

compute	Character. Indicates which personal values scores to compute and return. Possible values are "all" (default; computes all first and second-order personal values scores), "ten.values" (computes the ten basic personal values scores), "four.higher" (computes the four main higher-order values scores), "two.foci" (computes two higher-order values scores: self-focused values that regulate personal interests and characteristics, and other-focused values that regulate social relationships), "two.anxiety" (computes two higher-order values based on their relation to anxiety: self-protective values aimed at coping with anxiety due to uncertainty in the social and physical world, and growth-oriented or self-expansive values that express anxiety-free motivations).
correction	Logical. When TRUE, the scores are corrected for individual differences in the use of the response scale. Default is TRUE.
na.rm	Logical. When TRUE, NAs are ignored in calculations; when FALSE, NAs are preserved and will affect calculations. Default is TRUE.

### Value

A data frame with computed values. If both "df" and "items" parameters are provided, the returned data frame includes the original data with the calculations appended as new columns.

### Note

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### Examples

```
persval::twivi(df = data.frame(
  twivi1 = c(3, 1, 4), twivi2 = c(2, 5, 3), twivi3 = c(1, 5, 2), twivi4 = c(4, 3, 5),
  twivi5 = c(5, 2, 1), twivi6 = c(3, 4, 2), twivi7 = c(1, 2, 4), twivi8 = c(3, 1, 5),
  twivi9 = c(2, 4, 1), twivi10 = c(5, 3, 2), twivi11 = c(1, 4, 3), twivi12 = c(2, 1, 5),
  twivi13 = c(3, 5, 4), twivi14 = c(1, 2, 3), twivi15 = c(4, 5, 1), twivi16 = c(2, 3, 4),
  twivi17 = c(5, 1, 2), twivi18 = c(3, 4, 1), twivi19 = c(2, 3, NA), twivi20 = c(1, 3, 4)),
  correction = TRUE,
  compute = "all",
  na.rm = TRUE)
```

# Index

fourvalplot, [2](#), [4](#)

persval, [3](#)

persval-package (persval), [3](#)

pvq21, [3](#), [5](#)

pvq40, [3](#), [6](#)

svs, [3](#), [8](#)

tenvalplot, [4](#), [9](#)

tivi, [3](#), [11](#)

twivi, [3](#), [12](#)