Package: purging (via r-universe)

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Type Package

Title Simple Method for Purging Mediation Effects among Independent Variables

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BugReports https://github.com/pdwaggoner/purging/issues

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Description Simple method of purging independent variables of mediating effects. First, regress the direct variable on the indirect variable. Then, used the stored residuals as the new purged (direct) variable in the updated specification. This purging process allows for use of a new direct variable uncorrelated with the indirect variable. Please cite the method and/or package using Waggoner, Philip D. (2018) <doi:10.1177/1532673X18759644>.

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Imports MASS

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purge.lm *Purges mediator effects between two independent variables (linear)*

Description

Purges mediator effects between two independent variables, where selection (direct) variable is continuous, and returns new "purged" direct variable to be used in multivariate specification.

Usage

```
purge.lm(x, "direct", "indirect")
```

Arguments

`x` Represents data frame, though usage requires the data.frame name

`direct` Represents "direct", or mediator variable, though usage requires column's name

`indirect` Represents "indirect", or mediated variable, though usage requires column's name

Details

Purging of mediator effects between two independent variables in two steps. First, the function regresses the direct (mediator) variable on the indirect (mediated) variable. Second, it stores and uses the residuals from the bivariate specification as the new "purged" variable to be used in place of the original "direct" variable in multivariate analyses. Regarding syntax, the function is built with placeholder objects to calculate the quantities of interest. Then, the usage allows placing the real objects' names from working datasets (including, data frame, direct variable name in quotes, and indirect variable name in quotes) for intuitive usage.

Value

purged

Examples

```
df <- data.frame(A = 1:10, B = 2:11) # linear/continuous example
purge.lm(df, "A", "B")
```

`purge.logit` *Purges mediator effects between two independent variables (logit link function)*

Description

Purges mediator effects between two independent variables, where selection (direct) variable is binary, and returns new "purged" direct variable to be used in multivariate specification.

Usage

```
purge.logit(x, "direct", "indirect")
```

Arguments

`x`	Represents data frame, though usage requires the data.frame name
`direct`	Represents "direct", or mediator variable, though usage requires column's name
`indirect`	Represents "indirect", or mediated variable, though usage requires column's name

Details

Purging of mediator effects between two independent variables in two steps. First, the function regresses the direct (mediator) variable on the indirect (mediated) variable. Second, it stores and uses the residuals from the bivariate specification as the new "purged" variable to be used in place of the original "direct" variable in multivariate analyses. Regarding syntax, the function is built with placeholder objects to calculate the quantities of interest. Then, the usage allows placing the real objects' names from working datasets (including, data frame, direct variable name in quotes, and indirect variable name in quotes) for intuitive usage.

Value

purged

Examples

```
df <- data.frame(A = rep(0:1, 20), B = 1:20) # logit/binary example
purge.logit(df, "A", "B")
```

purge.negbin *Purges mediator effects between two independent variables (negative binomial)*

Description

Purges mediator effects between two independent variables, where selection (direct) variable is an event count, and returns new "purged" direct variable to be used in multivariate specification.

Usage

```
purge.negbin(x, "direct", "indirect")
```

Arguments

`x` Represents data frame, though usage requires the data.frame name

`direct` Represents "direct", or mediator variable, though usage requires column’s name

`indirect` Represents "indirect", or mediated variable, though usage requires column’s name

Details

Purging of mediator effects between two independent variables in two steps. First, the function regresses the direct (mediator) variable on the indirect (mediated) variable. Second, it stores and uses the residuals from the bivariate specification as the new "purged" variable to be used in place of the original "direct" variable in multivariate analyses. Regarding syntax, the function is built with placeholder objects to calculate the quantities of interest. Then, the usage allows placing the real objects’ names from working datasets (including, data frame, direct variable name in quotes, and indirect variable name in quotes) for intuitive usage.

Value

purged

Examples

```
df <- data.frame(A = c(1,1,1,1,2,2,3,3,4,5), B = 1:10) # negative binomial/counts example
purge.negbin(df, "A", "B")
```

purge.poisson *Purges mediator effects between two independent variables (Poisson)*

Description

Purges mediator effects between two independent variables, where selection (direct) variable is an event count, and returns new "purged" direct variable to be used in multivariate specification.

Usage

```
purge.poisson(x, "direct", "indirect")
```

Arguments

`x`	Represents data frame, though usage requires the data.frame name
`direct`	Represents "direct", or mediator variable, though usage requires column's name
`indirect`	Represents "indirect", or mediated variable, though usage requires column's name

Details

Purging of mediator effects between two independent variables in two steps. First, the function regresses the direct (mediator) variable on the indirect (mediated) variable. Second, it stores and uses the residuals from the bivariate specification as the new "purged" variable to be used in place of the original "direct" variable in multivariate analyses. Regarding syntax, the function is built with placeholder objects to calculate the quantities of interest. Then, the usage allows placing the real objects' names from working datasets (including, data frame, direct variable name in quotes, and indirect variable name in quotes) for intuitive usage.

Value

purged

Examples

```
df <- data.frame(A = c(1,1,1,1,1,2,2,2,3,4), B = 1:10) # Poisson/counts example
purge.poisson(df, "A", "B")
```

`purge.probit`	*Purges mediator effects between two independent variables (probit link function)*

Description

Purges mediator effects between two independent variables, where selection (direct) variable is binary, and returns new "purged" direct variable to be used in multivariate specification.

Usage

```
purge.probit(x, "direct", "indirect")
```

Arguments

`x`	Represents data frame, though usage requires the data.frame name
`direct`	Represents "direct", or mediator variable, though usage requires column’s name
`indirect`	Represents "indirect", or mediated variable, though usage requires column’s name

Details

Purging of mediator effects between two independent variables in two steps. First, the function regresses the direct (mediator) variable on the indirect (mediated) variable. Second, it stores and uses the residuals from the bivariate specification as the new "purged" variable to be used in place of the original "direct" variable in multivariate analyses. Regarding syntax, the function is built with placeholder objects to calculate the quantities of interest. Then, the usage allows placing the real objects’ names from working datasets (including, data frame, direct variable name in quotes, and indirect variable name in quotes) for intuitive usage.

Value

purged

Examples

```
df <- data.frame(A = rep(0:1, 20), B = 2:21) # probit/binary example
purge.probit(df, "A", "B")
```

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