Package ‘ccoptimalmatch’

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Type Package

Title Implementation of Case-Control Optimal Matching

Version 0.1.0

Description
Cases are matched to controls in an efficient, optimal and computationally flexible way. It uses
the idea of sub-sampling in the level of the case, by creating pseudo-observations of controls. The
user can select between replacement and without replacement, the number of controls, and sev-
eral covariates

Depends R (>= 2.10)

License GPL-2

Encoding UTF-8

LazyData true

RoxygenNote 7.1.1

Imports dplyr, rlang

Suggests knitr, rmarkdown

VignetteBuilder knitr

NeedsCompilation no

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### Description

A dataset containing cases and controls using the Intego registry data. The variables are as follows:

### Usage

data(being_processed)

### Format

A data frame with 77110 rows and 11 variables

### Details

- **cluster_case**: each case forms a cluster with all possible controls to be matched
- **Patient_Id**: Unique identifier for each patient
- **case_control**: binary, if case==Colorectal Cancer, else control
- **case_ind**: binary, if 1==case, else control
- **JCG**: Year of Contact
- **entry_year**: the year that the patient first entered the database
- **CI**: Comorbidity Index. Count of chronic diseases before index data
- **age_diff**: difference of age between cases and controls
- **fup_diff**: difference of follow-up between cases and controls
- **total_control_per_case**: total controls that are available to be pooled per case
- **freq_of_controls**: how many times the control is available to be matched for different cases

### Description

Fast and optimal matching for cases and controls

### Author(s)

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Description

A dataset containing cases and controls using the Intego registry data. But not the final dataset. The variables are as follows:

Usage

data(not_processed)

Format

A data frame with 656506 rows and 9 variables

Details

- Patient_Id: Unique identifier for each patient
- JCG: Year of Contact
- Birth_Year: Patient’s year of birth
- Gender: Patient’s Gender
- Practice_Id: Patient’s general practice
- case_control: binary, if case==Colorectal Cancer, else control
- entry_year: the year that the patient first entered the database
- fup_diff: difference of follow-up between cases and controls
- CI: Comorbidity Index. Count of chronic diseases before index data

Description

optimal_matching is performing the optimal match between cases and controls in an iterative way and computational efficient way
Usage

optimal_matching(
  total_database,
  n_con,
  cluster_var,
  Id_Patient,
  total_cont_per_case,
  case_control,
  with_replacement = FALSE
)

Arguments

total_database  a data frame that contains the cases and controls
n_con          number of controls to be matched
cluster_var     a variable that contains one case with all available controls to be pooled
Id_Patient      Id of the patient
total_cont_per_case
                total number of controls that are available for each case
case_control    a variable containing "case" and "control"
with_replacement  Use replacement or not

Details

Here is where I should put all my details. This is where I should give more examples if necessary

Value

a data frame containing the cases and the corresponding number of controls

Examples

optimal_matching(being_processed, n_con=2, cluster_var=cluster_case, Id_Patient=Patient_Id, total_cont_per_case=total_control_per_case, case_control = case_control)
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