Package 'SHIELD'

September 6, 2024

Title What the Package Does (One Line, Title Case)

Version 0.0.0.9000

Description What the package does (one paragraph).

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Encoding UTF-8

Roxygen list(markdown = TRUE)

RoxygenNote 7.2.3

R topics documented:

`get.base.initial.female.population`
get.base.initial.female.population

Description

generates the size of the 'female' population for the given years by calling `get.base.initial.population.for.sex` for sex-specific population data.

generates the size of the 'male' population for the given years by calling `get.base.initial.population.for.sex` for sex-specific population data.

genrates the size of 'male' population for given years

Usage

```
get.base.initial.female.population(
  location,
  specification.metadata,
  years = DEFAULT.POPULATION.YEARS
)
```

```
get.base.initial.male.population(
  location,
  specification.metadata,
  years = DEFAULT.POPULATION.YEARS
)

get.base.initial.population.for.sex(
  location,
  specification.metadata,
  sex,
  years = DEFAULT.POPULATION.YEARS
)
```

Arguments

location	location
specification.metadata	location
years	DEFAULT.POPULATION.YEARS #Todd: what's this field for?
sex	the sex of the designated population ('male' or 'female').

Value

2D matrix showing the number of persons broken down by race (columns) within each agegroups (rows)

vector of population for given years

Examples

```
get.base.initial.female.population("C.12580",specification.metadata)
where: specification.metadata=get.specification.metadata("shield","C.12580")
```

---

get.female.sexual.age.contact.proportions

get.female.sexual.age.contact.proportions

Description

returns a list of age contact proportions for females

returns a list of age contact proportions for msm

returns a list of age contact proportions for het male

returns a list of age contact proportions for designated group

Usage

```
get.female.sexual.age.contact.proportions(
  age.mixing.sd.mult,
  single.year.female.age.counts,
  single.year.age.sexual.availability,
  specification.metadata
)

get.msm.sexual.age.contact.proportions(
  age.mixing.sd.mult,
  single.year.msm.age.counts,
  single.year.age.sexual.availability,
  specification.metadata
)

get.heterosexual.male.sexual.age.contact.proportions(
  age.mixing.sd.mult,
  single.year.heterosexual.male.age.counts,
  single.year.age.sexual.availability,
  specification.metadata
)

do.get.age.contact.proportions.for.model(
  specification.metadata,
  location,
  age.mixing.sd.mult,
  age.model,
  age.counts,
  availability
)
```

Arguments

`age.mixing.sd.mult`	multiplier of the standard deviation of the age mixing model (diff_ages_partners ~ Normal(mu,sd)) used for calibration by calling `do.get.age.contact.proportions.for.model`
`single.year.female.age.counts`	number of individuals within each nominal age year for each age group
`single.year.age.sexual.availability`	proportion of individuals within each nominal age year available engaged in sexual activity
`specification.metadata`	specification.metadata
`location`	location
`age.model`	specific age.model used to inform new partnership probabilities

Details

DETAILS

Value

OUTPUT_DESCRIPTION

OUTPUT_DESCRIPTION

`get.female.single.year.age.counts` *get.female.single.year.age.counts*

Description

return counts of female in a single year

return counts of male in a single year

return counts of msm in a single year

To determine the proportion of the population that falls into specific age buckets

Usage

```
get.female.single.year.age.counts(
  location,
  population.years = DEFAULT.POPULATION.YEARS
)

get.male.single.year.age.counts(
  location,
  population.years = DEFAULT.POPULATION.YEARS
)

get.msm.single.year.age.counts(
  location,
  specification.metadata,
  population.years = DEFAULT.POPULATION.YEARS
)

get.heterosexual.male.single.year.age.counts(
  location,
  specification.metadata,
  population.years = DEFAULT.POPULATION.YEARS
)
```

Arguments

`location`	location
`population.years`	PARAM_DESCRIPTION, Default: DEFAULT.POPULATION.YEARS #Todd???
`specification.metadata`	specification.metadata

Value

OUTPUT_DESCRIPTION

OUTPUT_DESCRIPTION

`get.sexual.availability` *1-get.sexual.availability*

Description

Determines the proportion of people in each age bucket that are sexually available

Usage

```
get.sexual.availability()
```

Details

The model reflects an increase in sexual activity starting from age 13, reaching 100% at ages 20 to 64, and gradually tapering off until age 85, the final age group.

Value

1D vector with proportion of people in each age bucket that are sexually available