

Package: discrtr (via r-universe)

September 17, 2024

Title A Companion Package for the Book ``Discrete Choice Analysis with R''

Version 0.0.1

Description Templates and data files to support ``Discrete Choice Analysis with R'', Páez, A. and Boisjoly, G. (2023) <[doi:10.1007/978-3-031-20719-8](https://doi.org/10.1007/978-3-031-20719-8)>.

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Encoding UTF-8

Roxygen list(markdown = TRUE)

RoxygenNote 7.2.3

URL <https://github.com/paezha/dscrtr>

BugReports <https://github.com/paezha/dscrtr/issues>

Depends R (>= 2.10)

LazyData true

Suggests dfidx, readr

Imports magrittr, rmdformats

Repository <https://paezha.r-universe.dev>

RemoteUrl <https://github.com/paezha/dscrtr>

RemoteRef HEAD

RemoteSha 52845a8532b21736182f6d6db48b4b616d084b2d

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discrtr_template *discrtr template.*

Description

Template for creating a computational notebook for use with Discrete Choice Analysis with R

Usage

```
discrtr_template()
```

Format

An R Markdown file

mc_attitudes *McMaster Attitudes Data Set.*

Description

A data set containing information about *students* commuting to McMaster University. Data were collected by means of a travel survey in the fall of 2010. Respondents were asked about their mode of travel to McMaster University, in Hamilton, Canada. They were also asked to respond to a series of attitudinal statements. The data set contains relevant attributes about the respondents. The format of the table is wide, with each row representing an individual respondent. These variables were augmented with information from the 2011 Census of Canada and land use information from local sources.

Usage

```
data(mc_attitudes)
```

Format

A data frame with 1230 rows and 39 variables:

id Unique identifier for respondents

choice Mode of transportation chosen: Car, HSR (local transit), Walk

LAT Latitude of the place or residence, geocoded at the nearest major intersection or centroid of 6-digit postal area

LONG Longitude of the place or residence, geocoded at the nearest major intersection or centroid of 6-digit postal area

license Indicator variable for holding a driver license: Yes/No

vehicle Indicator variable for having individual access to a private car (i.e., car not shared with other household members): Yes/No

- gender** Woman/Man
- age** Age in years
- visa** Visa status of student: Domestic
- living_arrangements** Living arrangements DURING THE SCHOOL YEAR are: 1:Living with my family or relatives/By myself off-campus/Shared off-campus accommodations
- level** Level of studies: Undergraduate Year I (UG I)/Undergraduate Year II (UG I)/Undergraduate Year III (UG III)/Undergraduate Year IV (UG IV)/Undergraduate Year V (UG V)/Masters/PhD/Other (Diploma or Certificate)
- Active_Neighborhood** Response to statement "I like to live in a neighborhood where there's a lot going on": Five point likert scale from Strongly Disagree to Strongly Agree, including a neutral point
- Community** Response to statement "There is a sense of community in my neighborhood": Five point likert scale from Strongly Disagree to Strongly Agree, including a neutral point
- Neighbors** Response to statement "I know my neighbors well": Five point likert scale from Strongly Disagree to Strongly Agree, including a neutral point
- Safe_Walk** Response to statement "I feel safe and secure when walking in my neighborhood": Five point likert scale from Strongly Disagree to Strongly Agree, including a neutral point
- Shops_Important** Response to statement "Having shops and services within walking distance of my home is important to me": Five point likert scale from Strongly Disagree to Strongly Agree, including a neutral point
- Travel_Alone** Response to statement "I like traveling alone": Five point likert scale from Strongly Disagree to Strongly Agree, including a neutral point
- DAUID** Unique ID of Dissemination Area of the Census
- Rate_Couple_Child** Proportion of families that are couples with children out of all families in Dissemination Area
- Rate_SW_Child** Proportion of families that are single parent (woman) with children out of all families in Dissemination Area
- Rate_SM_Child** Proportion of families that are single parent (man) with children out of all families in Dissemination Area
- Mean_Children** Average number of children at home per census family in Dissemination Area
- Rate_Non_Canadian** Proportion of non-Canadian residents to total population in Dissemination Area
- Median_HH_Income** Median family income in Dissemination Area in \$10,000
- Mean_HH_Income** Mean family income in Dissemination Area in \$10,000
- Rate_Unemployment** Unemployment rate in Dissemination Area
- Rate_1yr_Move** Proportion of residents that moved to Dissemination Area in the year previous to the census
- Rate_5yr_Move** Proportion of residents that moved to Dissemination Area in the 5 years previous to the census
- Rate_Public** Proportion of residents in Dissemination Area that used public transportation to commute to work

Rate_Walk Proportion of residents in Dissemination Area that walked to work

Rate_Cycle Proportion of residents in Dissemination Area that cycled to work

AREA Area of Dissemination Area in square kilometers

LUM Entropy-based land use mix index in Dissemination Area: lower values mean more homogenous land uses, higher values greater mix of uses

SIDEWALK_DENSITY Sidewalk density in Dissemination Area in km/sq.km

STREET_DENSITY Street density in Dissemination Area in km/sq.km

INTERSECTION_DENSITY Intersection density in Dissemination Area in 1/sq.km

SF_P_RATIO Ratio of building footprint to parcel area in Dissemination Area: a measure of density of development

EMPLOYMENT_DENSITY Employment density in Dissemination Area in jobs/sq.km

POPULATION_DENSITY Population density in Dissemination Area in people/sq.km

Source

P\'aez, A. (2013). Mapping travelers' attitudes: does space matter?. *Journal of Transport Geography*, 26, 117-125. (<https://doi.org/10.1016/j.jtrangeo.2012.09.002>)

Examples

```
data(mc_attitudes)
summary(mc_attitudes$Community)
```

mc_commute.csv

McMaster Commuting Data Set (csv file).

Description

A delimited text file containing information about *students* commuting to McMaster University. Data were collected by means of a travel survey in the fall of 2010. Respondents were asked about their mode of travel to McMaster University, in Hamilton, Canada. They were also asked about the modes available to them. The characteristics of the trips were self-reported or imputed. The data set also contains relevant attributes about the respondents. The format of the table is long, with each row representing a choice situation.

Usage

```
data(mc_commute_long)
```

Format

An comma separated text file :

RespondentID Unique identifier for respondents

choice numeric variable indicating modes of transportation: (1) Cycle, (2) Walk, (3) HSR (local transit), (4) Car

avcycle Indicator variable for availability of cycling: (1) Yes, (0) No

avwalk Indicator variable for availability of walking: (1) Yes, (0) No

avhsr Indicator variable for availability of HSR: (1) Yes, (0) No

avcar Indicator variable for availability of car: (1) Yes, (0) No

timecycle Travel time by cycling in minutes (when mode not available coded as 100000)

timewalk Travel time by walking in minutes (when mode not available coded as 100000)

accesshsr Access time to HSR in minutes

waitingtimehsr Waiting time when travelling by HSR in minutes

transfer Number of transit transfers

timecar Travel time by car in minutes (when mode not available coded as 100000)

parking Indicator variable for holding a university parking permit: (1) Yes, (0) No

vehind Indicator variable for having individual access to a private car (i.e., car not shared with other household members): (1) Yes, (0) No

owncycle Indicator variable for owning a bicycle: (1) Yes, (0) No

gender Indicator variable for gender: (1) Woman, (0) Man

age Age in years

solo Indicator variable for living in solo accommodations: (1) Yes, (0) No

shared Indicator variable for a student living in a rental property with other students, i.e., shared accommodations: (1) Yes, (0) No

family Indicator variable for living in family home: (1) Yes, (0) No

child Indicator variable for presence of dependent minors in household: (1) Yes, (0) No

primary_caregiver Indicator variable for being the primary caregiver of dependent minors in household: (1) Yes, (0) No, (100000) No dependent minors in household

LAT Latitude of the place or residence, geocoded at the nearest major intersection or centroid of 6-digit postal area

LONG Longitude of the place or residence, geocoded at the nearest major intersection or centroid of 6-digit postal area

DAUID Unique ID of the dissemination area of place of residence according to the 2006 census of Canada

mhi Median household income of the dissemination area of place of residence according to the 2006 census of Canada

dwel_den Dwelling density in the dissemination area of the place of residence in \$1/km²

lum Entropy of the land use mix

st_den Street density in the dissemination area of the place of residence in \$km/km²

- inter_den** Intersection density in the dissemination area of the place of residence in $\$/\text{km}^2$
- SF_P_ratio** Ratio of surface of plots to built area
- side_density** Sidewalk density in the dissemination area of the place of residence in $\$/\text{km}^2$
- Shelters_SD** Response to statement "Shelters and other public transportation facilities that I commonly use are of good quality": 1 if Strongly Disagree, 0 otherwise
- Shelters_D** Response to statement "Shelters and other public transportation facilities that I commonly use are of good quality": 1 if Disagree, 0 otherwise
- Shelters_A** Response to statement "Shelters and other public transportation facilities that I commonly use are of good quality": 1 if Agree, 0 otherwise
- Shelters_SA** Response to statement "Shelters and other public transportation facilities that I commonly use are of good quality": 1 if Strongly Agree, 0 otherwise

Source

Whalen, K. E., Páez, A., & Carrasco, J. A. (2013). Mode choice of university students commuting to school and the role of active travel. *Journal of Transport Geography*, 31, 132-142. (<https://doi.org/10.1016/j.jtrangeo.2013.06.008>)

Examples

```
library(readr)
mc_commute <- read_csv(system.file("extdata", "mc_commute.csv", package = "discrtr"))
```

mc_commute_long	<i>McMaster Commuting Data Set (long format).</i>
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Description

A data set containing information about *students* commuting to McMaster University. Data were collected by means of a travel survey in the fall of 2010. Respondents were asked about their mode of travel to McMaster University, in Hamilton, Canada. They were also asked about the modes available to them. The characteristics of the trips were self-reported or imputed. The data set also contains relevant attributes about the respondents. The format of the table is long, with each row representing a choice situation.

Usage

```
data(mc_commute_long)
```

Format

An indexed data frame of class `dfidx` with 5500 rows and 62 variables:

- id** Unique identifier for respondents
- choice** Mode of transportation chosen: Cycle, Walk, HSR (local transit), Car
- parking** Indicator variable for holding a university parking permit: Yes/No

- vehind** Indicator variable for having individual access to a private car (i.e., car not shared with other household members): Yes/No
- gender** Woman/Man
- age** Age in years
- shared** Indicator variable for Indicator variable for a student living in a rental property with other students, i.e., living in shared accommodations
- family** Indicator variable for living in family home
- child** Indicator variable for presence of dependent minors in household: Yes/No
- street_density** Street density in the dissemination area of the place of residence in \$km/km^2\$
- sidewalk_density** Sidewalk density in the dissemination area of the place of residence in \$km/km^2\$
- LAT** Latitude of the place or residence, geocoded at the nearest major intersection or centroid of 6-digit postal area
- LONG** Longitude of the place or residence, geocoded at the nearest major intersection or centroid of 6-digit postal area
- PersonalVehComf_SD** Response to statement "The personal vehicles I usually travel in are comfortable": 1 if Strongly Disagree, 0 otherwise
- PersonalVehComf_D** Response to statement "The personal vehicles I usually travel in are comfortable": 1 if Disagree, 0 otherwise
- PersonalVehComf_A** Response to statement "The personal vehicles I usually travel in are comfortable": 1 if Agree, 0 otherwise
- PersonalVehComf_SA** Response to statement "The personal vehicles I usually travel in are comfortable": 1 if Strongly Agree, 0 otherwise
- Fun_SD** Response to statement "Getting there is half the fun": 1 if Strongly Disagree, 0 otherwise
- Fun_D** Response to statement "Getting there is half the fun": 1 if Disagree, 0 otherwise
- Fun_A** Response to statement "Getting there is half the fun": 1 if Agree, 0 otherwise
- Fun_SA** Response to statement "Getting there is half the fun": 1 if Strongly Agree, 0 otherwise
- ActiveNeigh_SD** Response to statement "I like to live in a neighborhood where there's a lot going on": 1 if Strongly Disagree, 0 otherwise
- ActiveNeigh_D** Response to statement "I like to live in a neighborhood where there's a lot going on": 1 if Disagree, 0 otherwise
- ActiveNeigh_A** Response to statement "I like to live in a neighborhood where there's a lot going on": 1 if Agree, 0 otherwise
- ActiveNeigh_SA** Response to statement "I like to live in a neighborhood where there's a lot going on": 1 if Strongly Agree, 0 otherwise
- UsefulTrans_SD** Response to statement "My commute trip is a useful transition between home and school": 1 if Strongly Disagree, 0 otherwise
- UsefulTrans_D** Response to statement "My commute trip is a useful transition between home and school": 1 if Disagree, 0 otherwise
- UsefulTrans_A** Response to statement "My commute trip is a useful transition between home and school": 1 if Agree, 0 otherwise

- UsefulTrans_SA** Response to statement "My commute trip is a useful transition between home and school": 1 if Strongly Agree, 0 otherwise
- BusComf_SD** Response to statement "The buses I usually travel in are comfortable": 1 if Strongly Disagree, 0 otherwise
- BusComf_D** Response to statement "The buses I usually travel in are comfortable": 1 if Disagree, 0 otherwise
- BusComf_A** Response to statement "The buses I usually travel in are comfortable": 1 if Agree, 0 otherwise
- BusComf_SA** Response to statement "The buses I usually travel in are comfortable": 1 if Strongly Agree, 0 otherwise
- TravelAlone_SD** Response to statement "I like traveling alone": 1 if Strongly Disagree, 0 otherwise
- TravelAlone_D** Response to statement "I like traveling alone": 1 if Disagree, 0 otherwise
- TravelAlone_A** Response to statement "I like traveling alone": 1 if Agree, 0 otherwise
- TravelAlone_SA** Response to statement "I like traveling alone": 1 if Strongly Agree, 0 otherwise
- Shelters_SD** Response to statement "Shelters and other public transportation facilities that I commonly use are of good quality": 1 if Strongly Disagree, 0 otherwise
- Shelters_D** Response to statement "Shelters and other public transportation facilities that I commonly use are of good quality": 1 if Disagree, 0 otherwise
- Shelters_A** Response to statement "Shelters and other public transportation facilities that I commonly use are of good quality": 1 if Agree, 0 otherwise
- Shelters_SA** Response to statement "Shelters and other public transportation facilities that I commonly use are of good quality": 1 if Strongly Agree, 0 otherwise
- Community_SD** Response to statement "There is a sense of community in my neighborhood": 1 if Strongly Disagree, 0 otherwise
- Community_D** Response to statement "There is a sense of community in my neighborhood": 1 if Disagree, 0 otherwise
- Community_A** Response to statement "There is a sense of community in my neighborhood": 1 if Agree, 0 otherwise
- Community_SA** Response to statement "There is a sense of community in my neighborhood": 1 if Agree, 0 otherwise
- personal_veh_comfortable** Response to statement "The personal vehicles I usually travel in are comfortable" as factor: SD-Strongly Disagree, D-Disagree, N-Neutral, A-Agree, SA-Strongly Agree
- getting_there_fun** Response to statement "Getting there is half the fun" as factor: SD-Strongly Disagree, D-Disagree, N-Neutral, A-Agree, SA-Strongly Agree
- like_active_neighborhood** Response to statement "I like to live in a neighborhood where there's a lot going on" as factor: SD-Strongly Disagree, D-Disagree, N-Neutral, A-Agree, SA-Strongly Agree
- commute_useful_transition** Response to statement "My commute trip is a useful transition between home and school" as factor: SD-Strongly Disagree, D-Disagree, N-Neutral, A-Agree, SA-Strongly Agree

- buses_comfortable** Response to statement "The buses I usually travel in are comfortable" as factor: SD-Strongly Disagree, D-Disagree, N-Neutral, A-Agree, SA-Strongly Agree
- prefer_travel_alone** Response to statement "I like traveling alone" as factor: SD-Strongly Disagree, D-Disagree, N-Neutral, A-Agree, SA-Strongly Agree
- shelter_good_quality** Response to statement "Shelters and other public transportation facilities that I commonly use are of good quality" as factor: SD-Strongly Disagree, D-Disagree, N-Neutral, A-Agree, SA-Strongly Agree
- sense_community** Response to statement "There is a sense of community in my neighborhood" as factor: SD-Strongly Disagree, D-Disagree, N-Neutral, A-Agree, SA-Strongly Agree
1 if Strongly Disagree, 0 otherwise
- numna** Total number of available alternatives, e.g., if bus and walk = 2, if all four = 4
- alt** A factor with the alternatives in the choice set
- available** An indicator variable for availability of the alternative
- time.Cycle** Travel time by alternative
- access** Access time to transit in minutes (i.e., reaching a transit stop)
- wait** Waiting time transit (i.e., at a transit stop)
- transfer** Number of transit transfers
- idx** Index for the table: includes chid (identifier for the choice) and alt (the alternative)

Source

Whalen, K. E., P\'aez, A., & Carrasco, J. A. (2013). Mode choice of university students commuting to school and the role of active travel. *Journal of Transport Geography*, 31, 132-142. (<https://doi.org/10.1016/j.jtrangeo.2013.06.008>)

Examples

```
data(mc_commute_long)
library(dfidx)
print(mc_commute_long, n = 12)
```

mc_commute_wide

McMaster Commuting Data set (wide format).

Description

A data set containing information about *students* commuting to McMaster University. Data were collected by means of a travel survey in the fall of 2010. Respondents were asked about their mode of travel to McMaster University, in Hamilton, Canada. They were also asked about the modes available to them. The characteristics of the trips were self-reported or imputed. The data set also contains relevant attributes about the respondents. The format of the table is wide, with each individual decision maker in a row.

Usage

```
data(mc_commute_wide)
```

Format

A data frame with 1375 rows and 74 variables:

id Unique identifier for respondents

choice Mode of transportation chosen: Cycle, Walk, HSR (local transit), Car

available.Cycle An indicator variable for availability of cycling: Yes/No

available.Walk An indicator variable for availability of walking: Yes/No

available.HSR An indicator variable for availability of buses: Yes/No

available.Car An indicator variable for availability of car: Yes/No

time.Cycle Travel time by bicycle to campus in minutes

time.Walk Travel time by walking to campus in minutes

time.HSR Travel time by bus to campus in minutes

time.Car Travel time by car to campus in minutes

access.Cycle Access time to mode in minutes (i.e., reaching a transit stop)

access.Walk Access time to mode in minutes (i.e., reaching a transit stop)

access.HSR Access time to mode in minutes (i.e., reaching a transit stop)

access.Car Access time to mode in minutes (i.e., reaching a transit stop)

wait.Cycle Waiting time (i.e., at a transit stop)

wait.Walk Waiting time (i.e., at a transit stop)

wait.HSR Waiting time (i.e., at a transit stop)

wait.Car Waiting time (i.e., at a transit stop)

transfer.Walk Number of transfers when travelling by transit

transfer.Cycle Number of transfers when travelling by transit

transfer.HSR Number of transfers when travelling by transit

transfer.Car Number of transfers when travelling by transit

parking Indicator variable for holding a university parking permit: Yes/No

vehind Indicator variable for having individual access to a private car (i.e., car not shared with other household members): Yes/No

gender Woman/Man

age Age in years

shared Indicator variable for a student living in a rental property with other students, i.e., living in shared accommodations

family Indicator variable for living in family home

child Indicator variable for presence of dependent minors in household: Yes/No

street_density Street density in the dissemination area of the place of residence in \$km/km²\$

- sidewalk_density** Sidewalk density in the dissemination area of the place of residence in $\$/\text{km}/\text{km}^2$
- LAT** Latitude of the place or residence, geocoded at the nearest major intersection or centroid of 6-digit postal area
- LONG** Longitude of the place or residence, geocoded at the nearest major intersection or centroid of 6-digit postal area
- PersonalVehComf_SD** Response to statement "The personal vehicles I usually travel in are comfortable": 1 if Strongly Disagree, 0 otherwise
- PersonalVehComf_D** Response to statement "The personal vehicles I usually travel in are comfortable": 1 if Disagree, 0 otherwise
- PersonalVehComf_A** Response to statement "The personal vehicles I usually travel in are comfortable": 1 if Agree, 0 otherwise
- PersonalVehComf_SA** Response to statement "The personal vehicles I usually travel in are comfortable": 1 if Strongly Agree, 0 otherwise
- Fun_SD** Response to statement "Getting there is half the fun": 1 if Strongly Disagree, 0 otherwise
- Fun_D** Response to statement "Getting there is half the fun": 1 if Disagree, 0 otherwise
- Fun_A** Response to statement "Getting there is half the fun": 1 if Agree, 0 otherwise
- Fun_SA** Response to statement "Getting there is half the fun": 1 if Strongly Agree, 0 otherwise
- ActiveNeigh_SD** Response to statement "I like to live in a neighborhood where there's a lot going on": 1 if Strongly Disagree, 0 otherwise
- ActiveNeigh_D** Response to statement "I like to live in a neighborhood where there's a lot going on": 1 if Disagree, 0 otherwise
- ActiveNeigh_A** Response to statement "I like to live in a neighborhood where there's a lot going on": 1 if Agree, 0 otherwise
- ActiveNeigh_SA** Response to statement "I like to live in a neighborhood where there's a lot going on": 1 if Strongly Agree, 0 otherwise
- UsefulTrans_SD** Response to statement "My commute trip is a useful transition between home and school": 1 if Strongly Disagree, 0 otherwise
- UsefulTrans_D** Response to statement "My commute trip is a useful transition between home and school": 1 if Disagree, 0 otherwise
- UsefulTrans_A** Response to statement "My commute trip is a useful transition between home and school": 1 if Agree, 0 otherwise
- UsefulTrans_SA** Response to statement "My commute trip is a useful transition between home and school": 1 if Strongly Agree, 0 otherwise
- BusComf_SD** Response to statement "The buses I usually travel in are comfortable": 1 if Strongly Disagree, 0 otherwise
- BusComf_D** Response to statement "The buses I usually travel in are comfortable": 1 if Disagree, 0 otherwise
- BusComf_A** Response to statement "The buses I usually travel in are comfortable": 1 if Agree, 0 otherwise
- BusComf_SA** Response to statement "The buses I usually travel in are comfortable": 1 if Strongly Agree, 0 otherwise

- TravelAlone_SD** Response to statement "I like traveling alone": 1 if Strongly Disagree, 0 otherwise
- TravelAlone_D** Response to statement "I like traveling alone": 1 if Disagree, 0 otherwise
- TravelAlone_A** Response to statement "I like traveling alone": 1 if Agree, 0 otherwise
- TravelAlone_SA** Response to statement "I like traveling alone": 1 if Strongly Agree, 0 otherwise
- Shelters_SD** Response to statement "Shelters and other public transportation facilities that I commonly use are of good quality": 1 if Strongly Disagree, 0 otherwise
- Shelters_D** Response to statement "Shelters and other public transportation facilities that I commonly use are of good quality": 1 if Disagree, 0 otherwise
- Shelters_A** Response to statement "Shelters and other public transportation facilities that I commonly use are of good quality": 1 if Agree, 0 otherwise
- Shelters_SA** Response to statement "Shelters and other public transportation facilities that I commonly use are of good quality": 1 if Strongly Agree, 0 otherwise
- Community_SD** Response to statement "There is a sense of community in my neighborhood": 1 if Strongly Disagree, 0 otherwise
- Community_D** Response to statement "There is a sense of community in my neighborhood": 1 if Disagree, 0 otherwise
- Community_A** Response to statement "There is a sense of community in my neighborhood": 1 if Agree, 0 otherwise
- Community_SA** Response to statement "There is a sense of community in my neighborhood": 1 if Agree, 0 otherwise
- personal_veh_comfortable** Response to statement "The personal vehicles I usually travel in are comfortable" as factor: SD-Strongly Disagree, D-Disagree, N-Neutral, A-Agree, SA-Strongly Agree
- getting_there_fun** Response to statement "Getting there is half the fun" as factor: SD-Strongly Disagree, D-Disagree, N-Neutral, A-Agree, SA-Strongly Agree
- like_active_neighborhood** Response to statement "I like to live in a neighborhood where there's a lot going on" as factor: SD-Strongly Disagree, D-Disagree, N-Neutral, A-Agree, SA-Strongly Agree
- commute_useful_transition** Response to statement "My commute trip is a useful transition between home and school" as factor: SD-Strongly Disagree, D-Disagree, N-Neutral, A-Agree, SA-Strongly Agree
- buses_comfortable** Response to statement "The buses I usually travel in are comfortable" as factor: SD-Strongly Disagree, D-Disagree, N-Neutral, A-Agree, SA-Strongly Agree
- prefer_travel_alone** Response to statement "I like traveling alone" as factor: SD-Strongly Disagree, D-Disagree, N-Neutral, A-Agree, SA-Strongly Agree
- shelter_good_quality** Response to statement "Shelters and other public transportation facilities that I commonly use are of good quality" as factor: SD-Strongly Disagree, D-Disagree, N-Neutral, A-Agree, SA-Strongly Agree
- sense_community** Response to statement "There is a sense of community in my neighborhood" as factor: SD-Strongly Disagree, D-Disagree, N-Neutral, A-Agree, SA-Strongly Agree
1 if Strongly Disagree, 0 otherwise
- numna** Total number of available alternatives, e.g., if bus and walk = 2, if all four = 4

Source

Whalen, K. E., P'aez, A., & Carrasco, J. A. (2013). Mode choice of university students commuting to school and the role of active travel. *Journal of Transport Geography*, 31, 132-142. (<https://doi.org/10.1016/j.jtrangeo.2013.06.008>)

Examples

```
data(mc_commute_wide)
summary(mc_commute_wide$choice)
```

 mc_modality

 McMaster Modality Data Set.

Description

A dataset containing information about *students*, *staff*, and *faculty* commuting to McMaster University. Data were collected by means of a travel survey in the fall of 2010. Respondents were asked about their mode of travel to McMaster University, in Hamilton, Canada. They were also asked about the modes available to them. The data set also contains relevant attributes about the respondents. The format of the table is wide, with each row representing an individual respondent. These variables were augmented with information from the 2011 Census of Canada and land use information from local sources.

Usage

```
data(mc_modality)
```

Format

A data frame with 4,146 rows and 37 variables:

id Unique identifier for respondents

choice Mode of transportation chosen: Active Travel (Cycle/Walk), HSR (local transit), Car, GO (regional transit)

LAT Latitude of the place or residence, geocoded at the nearest major intersection or centroid of 6-digit postal area

LONG Longitude of the place or residence, geocoded at the nearest major intersection or centroid of 6-digit postal area

shared_vehicle Indicator variable for having individual access to a private car (i.e., car shared with other household members): Yes/No

bicycle Indicator variable for owning a bicycle: Yes/No

gender Woman/Man

age Age in years

status Indicator variable for status at McMaster: Staff or Faculty/Student

care_giver Indicator variable for being primary care giver for any minors in the household: Yes/No

- modality** Indicator variable for number of available modes: One Mode/Two Modes/Three Modes/Four Modes
- Boring** Response to statement "Traveling is boring" as factor: Strongly Disagree, Disagree, Neutral, Agree, Strongly Agree
- Buses_Comfortable** Response to statement "The buses I usually travel in are comfortable" as factor: Strongly Disagree, Disagree, Neutral, Agree, Strongly Agree
- Clean_Fuel** Response to statement "To improve the environment, I am willing to pay a little more to use a hybrid, electric or other clean fuel vehicle" as factor: Strongly Disagree, Disagree, Neutral, Agree, Strongly Agree
- Limit_Driving** Response to statement "I limit my auto travel to help improve congestion and the environment" as factor: Strongly Disagree, Disagree, Neutral, Agree, Strongly Agree
- Productive_Time** Response to statement "I use my commute time productively" as factor: Strongly Disagree, Disagree, Neutral, Agree, Strongly Agree
- Safe_Cycle** Response to statement "I feel safe and secure to cycle around town" as factor: Strongly Disagree, Disagree, Neutral, Agree, Strongly Agree
- Shops_Services** Response to statement "Having shops and services within walking distance of my home is important to me" as factor: Strongly Disagree, Disagree, Neutral, Agree, Strongly Agree
- Someone_Else** Response to statement "Usually, I'd rather have someone else do the driving" as factor: Strongly Disagree, Disagree, Neutral, Agree, Strongly Agree
- Stuck_Traffic** Response to statement "Getting stuck in traffic doesn't bother me too much" as factor: Strongly Disagree, Disagree, Neutral, Agree, Strongly Agree
- Transition** Response to statement "My commute trip is a useful transition between home and school" as factor: Strongly Disagree, Disagree, Neutral, Agree, Strongly Agree
- Travel_Alone** Response to statement "I like traveling alone" as factor: Strongly Disagree, Disagree, Neutral, Agree, Strongly Agree
- Travel_Tiring** Response to statement "Traveling is generally tiring for me" as factor: Strongly Disagree, Disagree, Neutral, Agree, Strongly Agree
- Wasted_Time** Response to statement "Traveling is generally tiring for me" as factor: Strongly Disagree, Disagree, Neutral, Agree, Strongly Agree
- Rate_Immigrant** Proportion of immigrants to total population in Dissemination Area
- Rate_Non_Canadian** Proportion of non-Canadian residents to total population in Dissemination Area
- Rate_Labor** Proportion of residents in Dissemination Area who are in the labor force
- Rate_Unemployment** Unemployment rate in Dissemination Area
- Rate_Married** Proportion of families headed by a married couple to total population in Dissemination Area
- Mean_Age** Mean age of residents in Dissemination Area in years
- Mean_Children** Mean number of children per family in Dissemination Area
- Median_HH_Income** Median family income in Dissemination Area in \$10,000
- LITA** Transit access index – combination of capacity, frequency, and coverage of service (Wiley et al., 2011)

LUM Entropy-based land use mix index in Dissemination Area: lower values mean more homogeneous land uses, higher values greater mix of uses

MAC_DISTANCE Network distance from place of residence to McMaster University in km

POPULATION_DENSITY Population density in Dissemination Area in people/sq.km

SF_P_RATIO Ratio of building footprint to parcel area in Dissemination Area: a measure of density of development

Source

Lavery, T., Páez, A., & Kanaroglou, P.S. (2013). Driving out of choices: An investigation of transport modality in a university sample. *Transportation Research Part A: Policy and Practice*, 57:37-46 (<https://doi.org/10.1016/j.tra.2013.09.010>)

Examples

```
data(mc_modality)
summary(mc_modality)
```

urban_types

Hamilton City boundaries and urban types

Description

Classification of regions by type: urban, suburban, and rural. This is based on the rural boundaries of the city, and the planning regions.

Usage

```
data(urban_types)
```

Format

An object of class sf (inherits from tbl_df, tbl, data.frame) with 3 rows and 2 columns.

Details

#' @format A simple features data frame with 2 rows and 2 variables:

Type Classification of the region: "Urban", "Suburban", "Rural"

geometry Geometry of polygons

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