MOBIS-Covid19 metadata paper

MOBIS-COVID19

Metadata

Joseph Molloy

Travel Survey Metadata Series 81 **May 2021**

Institut für Verkehrsplanung und Transportsysteme
Institute for Transport Planning and Systems

Eidgenössische Technische Hochschule Zürich
Swiss Federal Institute of Technology Zurich

Contents

Document description

Title

MOBIS-Covid19

Creator

Joe Molloy (IVT, ETH Zurich)

Subject

Codebook, travel diary, online surveys, GPS tracking, pandemic mobility tracking

Description

This document contains a comprehensive codebook for the multiple surveys collated as part of the MOBIS-Covid19 project

Publisher

Institute for Transport Planning and Systems (IVT), ETH Zurich

Contributor

Thomas Schatzmann (IVT, ETH Zurich) Kay W. Axhausen (IVT, ETH Zurich)

Date

2021-05-18

Type

Codebook, surveydata

Format

Portable document format (pdf), Rdata (.rda)

Source

https://www.ivt.ethz.ch/en/vpl/travel-research-data.html

Language

English

Relation

https://www.ivt.ethz.ch

https://ivtmobis.ethz.ch/mobis/covid19/en/

Details on the survey methods, Catch-my-Day app and results can be found in:

Molloy, J. (2021): *Undertaking mobility field experiments using GPS tracking*, PhD Thesis, IVT, ETH Zurich, Zurich.

Coverage

Switzerland, September 2019 - May 2021 (Ongoing)

Rights

Institute for Transport Planning and Systems (IVT), ETH Zurich

Version responsibility

Joseph Molloy (IVT, ETH Zurich)

Study description

Title

MOBIS-Covid19

Creator

Joseph Molloy (IVT, ETH Zurich)

Subject

Codebook, travel diary, online surveys, GPS tracking, pandemic mobility tracking

Description

The MOBIS-Covid19 survey is an effort to track the changes in daily mobility behaviour during the pandemic using the GPS tracking app, Catch-my-Day, based on the (www.motion-tag.com)[MotionTag] platform. It is based off the MOBIS study, using the same technology, which exposed participants to a mobility pricing scheme and monitored thier response to it.

The participants for the study were invited from the pool of 3680 participants who completed the MOBIS study. From late 2020 onwards, the panel was continually replenished through a collaboration with the market research firm, Link.

Publisher

Institute for Transport Planning and Systems (IVT), ETH Zurich

Contributor

Thomas Schatzmann (IVT, ETH Zurich)

Christopher Tchervenkov (IVT, ETH Zurich)

Beaumont Shoeman (WWZ, Uni Basel)

Beat Hintermann (WWZ, Uni Basel)

Kay W. Axhausen (IVT, ETH Zurich)

Date

2021-05-18

Type

Codebook, surveydata

Format

Portable document format (pdf), RData (.rda)

Source

https://www.ivt.ethz.ch/en/vpl/travel-research-data.html

Language

English, German, French

Relation

https://www.ivt.ethz.ch

https://ivtmobis.ethz.ch/mobis/covid19/en/

Details on the survey methods, Catch-my-Day app and results can be found in:

Molloy, J. (2021): *Undertaking mobility field experiments using GPS tracking*, PhD Thesis, IVT, ETH Zurich, Zurich.

Coverage

Switzerland, January 2015 - April 2016

Rights

Institute for Transport Planning and Systems (IVT), ETH Zurich

Other identifications, funding and acknowledgements

The authors gratefully thank to the ASTRA, UVEK and SBB for thier support of the project. We also give thanks to David Zani and Qinggang Gao, former research assistants at the IVT, for their outstanding contributions to the project.

Unit of analysis

Individuals, trip-legs and activities

Notes on MOBIS vs. MOBIS-Covid

MOBIS was a large study on mobility pricing in Switzerland, undertaken between September 2019 and January 2020.

A sample of 90,000 participants were invited to complete an online survey (the introduction survey), and those who were then eligible on its completion were further invited to take part in a 8 week GPS tracking study, using the tracking app, Catch-my-Day, available on Android and iOS. The app requires a registration code to use, but is essentially identical to the MotionTag app, which is freely downloadable on the respective app store.

3690 participants completed the 8 week tracking study, obtaining an incentive of 100 CHF. The pricing treatment group also received any remaining budget they saved. They were invited to continue using the tracking app after the study was completed. And many continued to do so.

In March 2020, around 10% were still using the Catch-my-Day app when the Pandemic started. At this point, we reinvited all 3690 participants to reinstall the app, and track during the pandemic. Around 1,600 agreed to do so, without any financial incentive. For more details on the update and following attrition rate, see https://ivtmobis.ethz.ch/mobis/covid19/reports/latest

Hence the MOBIS-Covid sample is essentially a subsample of the MOBIS study. Due to the long duration of tracking for some participants ($>$ 1 year), there are multiple surveys with changing socio-demographic values which need to be considered.

There were two surveys for the MOBIS study – one before, and one after. The after one also asked about any changes in home and work location, and job status.

The intial covid survey asked these questions again, as well as collected updated socio-demographics for the participants. There were then two surveys that asked about working from home during the pandemic. The second of these also asked about any changes to mobility-tool ownership.

References:

A national-scale mobility pricing experiment using GPS tracking and online surveys in Switzerland: Response rates and survey method results

https://www.research-collection.ethz.ch/handle/20.500.11850/441958

https://www.research-collection.ethz.ch/handle/20.500.11850/424218

https://www.research-collection.ethz.ch/handle/20.500.11850/429818

Folder Structure

- tracking
  - mobis_tracking_summary.csv
  - legs.csv
  - activities.csv
  - mode_matching.csv
  - participants_tracking_summary.csv
  - participants.csv
- surveys
  - mobis
    - Introduction
    - Final
  - covid
    - 1_Initial
    - 2_WFH
    - 3_WFH_Mobtools
    - 4_Link
- enrichments
  - data_covid_basel.7z
  - imputed_activity_purpose.csv
  - mobis_participant_accessibility.csv
- data_views
  - active_days.csv
  - daily_mobility_and_activities.csv
  - working_status_all_surveys.csv

Phases

The original MOBIS study was a field experiment with two phases, one control (**phase 1**), and one treated (**phase 2**), both 28 days long.

The participants were allowed to continue using the app after their treatment phase had finished, and all legs and activities from this point until 2020-03-02 are grouped into **phase 3**.

The **phases 4, 5,6,7,8** and onwards refer to different specific periods of the corona pandemic and MOBIS-Covid19 study.

Phase	Description	Start Date
1	Control phase of MOBIS experiment	First 28 days of tracking
2	Treatment phase of MOBIS	Second 28 days of tracking
3	Post-MOBIS	57^{th} day of tracking till 2020-03-02
4	Pandemic starts in Switzerland	2020-03-02
5	Post Lockdown	2020-05-11
6	Masks required on all public transport	2020-07-06
7	start of the second wave	2020-10-19
8	Sample expanded with an additional panel (not yet in the data here, these participants are identifiable by their 7-character participant ids).	2020-11-12

Treatments

Participants in MOBIS were exposed to one of three treatments.

- Those in 'Control' continued with no change to the protocol
- Those in 'Nudging' were provided with weekly information on their external costs
- Those in 'Pricing' were provided the information, as well as a budget from which they could collect the remaing amount at the end of the study, if they reduced their external costs.

For the MDCEV analysis, this is only relevant in the fact that the phase 2 tracking data (and possibly ongoing phases if habits were learned) for participants in the nudging and pricing groups was collected under experimental conditions, and need to be excluded from certain analysis.

Modes and Purposes

The following modes are detected:

- Private Modes
  - "Mode::Car"
  - "Mode::Bicycle"
  - "Mode::Ebicycle"
  - "Mode::Etrottinett"
  - "Mode::MotorbikeScooter"
  - "Mode::Walk"
- Shared Modes
  - "Mode::TaxiUber"
  - "Mode::RidepoolingPikmi"
  - "Mode::CarsharingMobility"
- Public Transport
  - "Mode::Airplane"
  - "Mode::Boat"
  - "Mode::Bus"
  - Rail Modes
    - "Mode::Tram"
    - "Mode::Subway"
    - "Mode::LightRail" (actually S-Bahn)
    - "Mode::Train"
    - "Mode::RegionalTrain"

The following purposes are detected in the app. Note that the descriptions were not provided with the app, so the reporting by participant is subject to their own interpretation of the purpose.

Purpose	**Notes**
Assistance	Assistance of another person (ie pickup/drop-off)
Coworking	
Errand	
Home	
Homeoffice	

Purpose	**Notes**
Leisure	
Shopping	
Study	
Unknown	If no purpose was detected. In this case use the imputed purposes column
Wait	Generally waiting for public transport
Work	

The following purposes are imputed for activities based on the labelled activity data:

Purpose	**Notes**
Home	
Work	
Leisure	
Shopping	
Other	Includes waiting at public transport stops
Errand	
Assistance	
Education	

Tracking data

The Catch-my-day app collected both the legs (stages) and activities performed by the user during thier day. These are provided in two separate files as often the analysis requires one or the other. However, they can be combined back together to from a daily travel log (i.e. stage - stage - activity - stage - activity, etc), based on the 'started_at' and 'finished_at' timestamps. The geometry structures are naturally different (movement vs stationary). Legs are represented by three points: start, middle and end, and activities by

a single point. The route trajectories and timestamped waypoints of the legs are available on request.

Coordinate system and point resolution

The respective leg and activitie locations are provided as X and Y coordinates. They are provided in the LV95 coordinate system (ESPG:2056), and anonymised to a 100m grid. This level of annonymisation also matches the [https://www.bfs.admin.ch/bfs/de/home.assetdetail.14716365.html](statPOP dataset for Switzerland).

This coordinate system provides a specific accurate representation of the Swiss geographical region. As such, spatial analysis of international trips in the database requires the original data, which can be requested from IVT.

Surveys

In this section, all the surveys that have been collated into the participants and working-from-home files (see **??** and **??**. The raw csvs from these surveys provided under the survey folder. These surveys include extra data collected which has not been included in the participants file, such as that on attitudes, values, lifestyles and feedback on the original MOBIS study.

MOBIS

For the MOBIS surveys, the first row is the column name, and the second row is the question text (in english for that particular column. PDFs of the online surveys are included in the three available languages, German, French and English.

Introduction Survey

The introduction survey data has been split into two parts, with and without the "transport policy" questions. The transport questions (included in the `transport_questions.csv`) are statements regarding transport policy where participants were asked to give their response on a 5-point Likert scale, from strongly disagree to strongly agree. For details of the question framing in each language, see the `codebook.csv` in the same folder. These questions were not asked of the participants invited to replenish the sample during the MOBIS-Covid19 study (those with 7-character ids).

Final Survey

Category	Displayed Question	Range "scale"
Satisfied	How satisfied are you with the Swiss transport system?	Dissatisfied ... Satisfied
Problems	Below is a list of potential problems commonly associated with transport. Please indicate for each problem whether it should receive more or less attention from policy makers, compared to how much attention it currently receives.	Less attention ... More Attention
Factors	Below is a list of factors defined by transport policy. Please indicate for each factor whether you find its current level to be:	too low ... too high
Policies	Please indicate whether you agree or disagree with each policy.	Disagree ... Agree
Opinion Statements	Please indicate your level of agreement or disagreement with the following statements.	Disagree ... Agree
Attitudes	Do you agree with the following statements? Compared to using public transport, using a car:	Disagree ... Agree
Mobis	The following questions are about the MOBIS research project. Please indicate your level of agreement with the following statements. The MOBIS study:	Disagree ... Agree
Motivation	What was your motivation to participate in our smartphone study? (Multiple choice)	
Email	Do you agree with the following statements? The information provided in the MOBIS e-mails:	Disagee ... Agree

Category	Column	Description
Satisfied	satisfied_1	Road infrastructure
	satisfied_2	Public transportation
Problems	problems_1	Road congestion
	problems_2	Greenhouse gas emissions from motorized traffic
	problems_3	Health effects of air pollution from motorized traffic
	problems_4	Extent of mobility overall (people travel too much)
Factors	factors_1	Price of mobility in general
	factors_2	Capacity of road infrastructure
	factors_3	Capacity of public transport
	factors_4	Price of fuel
	factors_5	Price of public transport tickets
Policies	policies_1	Time- and route-specific mobility pricing, made revenue-neutral by lowering other taxes.
	policies_2	Dynamic adjustment of speed limits on highways to optimize traffic flow.
	policies_3	Widen major highways with extra lanes.
	policies_4	Increase the cost of public parking in city centers.
Opinion Statements	opinionstatements_1	The government should build sufficient road capacity to satisfy demand at all times.

	opinionstatements_2	The government should build sufficient public transport capacity to satisfy demand at all times.
	opinionstatements_3	The price for mobility should reflect the social cost (e.g., health, environment, congestion).
	opinionstatements_4	The transport network should be used more efficiently by introducing dynamic pricing (e.g., higher prices during rush hour).
	opinionstatements_5	All people should pay the same for mobility, regardless of when and where they travel.
Attitudes	attitudes_car_pt_1	... saves time
	attitudes_car_pt_2	... saves money
	attitudes_car_pt_3	... is harmful for the environment
	attitudes_car_pt_4	... has negative impacts on public health
	attitudes_car_pt_5	... is pleasant
	attitudes_car_pt_6	... is comfortable
	attitudes_car_pt_7	... is convenient
	attitudes_car_pt_8	... makes me flexible/independent
	attitudes_car_pt_9	... allows me to make the best use of travel time
	attitudes_car_pt_10	... protects me from unfavorable weather conditions
	attitudes_car_pt_11	... enables me to transport luggage
	attitudes_car_pt_12	...is safe with regards to traffic

	attitudes_car_pt_13	...can increase congestion
Mobis	mobis_effect_1	... has affected my travel behavior during the study period
	mobis_effect_2	... will continue to affect my travel behavior in the future
	mobis_effect_3	... has raised my awareness about the external costs of transport
	mobis_effect_4	... has made me consider alternative travel options
	mobis_effect_5	... has made me re-evaluate my car use
Motivation	motivation_1	Selected Choice - Financial reward
	motivation_2	Selected Choice - Interest in transport policies
	motivation_7	Selected Choice - Interest in impacts of transport (congestion, air pollution, health...)
	motivation_3	Selected Choice - Desire to learn more about personal travel behaviour
	motivation_4	Selected Choice - Other (please specify):
	motivation_4_freetext	Room for other suggestions, freetext
Email	email_opinion_1	... was clear
	email_opinion_2	... was interesting
	email_opinion_3	... made me reflect on the content
	email_opinion_4	... was difficult to understand
Ext	ext_costs_exam	How would you define the external costs of your travel behavior?
	aware_make_money	Were you aware that you could earn money by changing your travel behaviour during the second phase of the study?

Aware	aware_reduce_ext_cos	Were you aware that you could reduce the external costs of your travel by changing your travel behaviour during the second phase of the study?
Car	car_pool	Due to technical reasons, it was not possible to mark a trip as "car-pooled" with someone, even though this is an effective way of reducing external costs. Did you share rides with others in order to reduce your external costs?
Cost	cost_travel_9	What is the average private cost of your car travel per kilometre?
Revenue	revenue	If dynamic mobility pricing (i.e., prices depending on mode, route and time) were introduced, what should be done with the revenue?
	revenue_6_freetext	Room for other suggestions; freetext
Return	return_household	If the money were returned to households, which option would you prefer?
	return_household_6_freetext	Room for other suggestions; freetext
	return_transport	If the money were used to fund transport projects, how should it be prioritized?
Health	health	In general, how would you say your health is?

Lifestyles and Values

The following questions in the final survey were asked of participants to support the use of a typologie for lifestyles and values, based on the framework of **?**. For more specifics of the questions asked, see the survey pdfs in the respective folder, and https://www.sccer-mobility.ch/export/sites/sccer-mobility/p_supporting_measures/Annual-Conferences/AC2020/Tomic_et_al_2020_SCCER_Mobility.pdf

Category	Column	Description
Lifestyles	lifestyles_1	I maintain an upscale standard of living
	lifestyles_2	I live according to religious principles
	lifestyles_3	I uphold my family traditions
	lifestyles_4	I enjoy my life to the fullest degree
	lifestyles_5	I go out often
	lifestyles_6	I find my life especially pleasing when there is constantly something going on
Leisure	leisure_1	Visiting art exhibitions or galleries
	leisure_2	Reading books
	leisure_3	Reading a national newspaper
Dinner	dinner_12	When you have a really nice dinner in a restaurant, how much do you spend at most per person? (CHF)
Values	values_1	EQUALITY: equal opportunity for all
	values_2	RESPECTING THE EARTH: harmony with other species
	values_3	SOCIAL POWER: control over others, dominance
	values_4	PLEASURE: joy, gratification of desires
	values_5	UNITY WITH NATURE: fitting into nature
	values_6	A WORLD AT PEACE: free of war and conflict
	values_7	WEALTH: material possessions, money

values_8	AUTHORITY: the right to lead or command
values_9	SOCIAL JUSTICE: correcting injustice, care for the weak
values_10	ENJOYING LIFE: enjoying food, sex, leisure, etc.
values_11	PROTECTING THE ENVIRONMENT: preserving nature
values_12	INFLUENTIAL: having an impact on people and events
values_13	HELPFUL: working for the welfare of others
values_14	PREVENTING POLLUTION: protecting natural resources
values_15	SELF-INDULGENT: doing pleasant things
values_16	AMBITIOUS: hard-working, aspiring

MOBIS-Covid19

Initial survey

Due to the length of time since the start of the MOBIS study, and the altered mobility environment since the start of the pandemic, the MOBIS participants were asked to resupply much of the information provided in the original MOBIS introduction survey. However, the completion of this survey was not compulsory for participation in the MOBIS-Covid19 study. As such, where no record for the MOBIS-Covid19 inital survey is provided, then the information proivded in the MOBIS introduction survey should be used.

Working from home surveys - No. 1, and No. 2 with mobility tools

The working from home survey was untertaken with the participants to assess how working conditions changed as a result of the measures introduced to combat the pandemic.

Two surveys were undertaken, in April and October, 2021 asking participants about any changes to their working situation, in particular regarding home-office and *Kurzarbeit*. The second of these also asked for any changes in mobility tool ownership that had resulted from the pandemic - i.e. a cancellation of any public transport subscription.

Link panel replenishment

Starting in December 2020, an collaboration with the Market research company *Link* enabled the constant replenishment of the tracking panel, to keep the sample size around 900 persons. The survey to collect socio-demographics and other information on these participants is compatible with the output from the first MOBIS-Covid19 survey. However, whereas not all MOBIS participants filled out this initial MOBIS-Covid19 survey, all participants from the Link sub-panel were required to fill this survey out before being given a registration code to the Catch-my-Day app.

Dataset list / file overview

participants

- **Title:** Participants
- **Filename:** tracking/participants.rda
- **Section link:** participants: File description

legs

- **Title:** legs dataset
- **Filename:** tracking/legs.rda
- **Section link:** legs: File description

activities

- **Title:** activities dataset
- **Filename:** tracking/activities.rda
- **Section link:** activities: File description

participants_tracking_summary

- **Title:** Summary of tracking milestones/dates for participants
- **Filename:** tracking/participants_tracking_summary.rda
- **Section link:** participants_tracking_summary: File description

daily_mobility_and_activities

- **Title:** Daily mobility data view
- **Filename:** data_views/daily_mobility_and_activities.rda
- **Section link:** daily_mobility_and_activities: File description

work_homeoffice

- **Title:** Combined home office surveys
- **Filename:** data_views/work_homeoffice.rda
- **Section link:** work_homeoffice: File description

active_days

- **Title:** Active days data view
- **Filename:** data_views/active_days.rda
- **Section link:** active_days: File description

imputed_activity_purpose

- **Title:** Imputed activity purposes
- **Filename:** enrichments/imputed_activity_purpose.rda
- **Section link:** imputed_activity_purpose: File description

participants: File description

Title: Participants

Contents: This dataset of the participant information, including updates over time from multiple questionaires. Hence, there are multiple rows for each participant. Each row per participant is valid from the survey date specified in the `survey_date` field.

Data collection: Merged from multiple qualtrics surveys

Unit of analysis: Individual, with household variables prefixed by `hh_`

File structure: DataFrame, with `participant_id`+`survey` uniquely identifying each row.

File location: tracking/participants.rda

Number of cases: 6108.

Variables per record: 150.

participants: Variables

`participant_id`

The id of the participant.

Format: Character.

survey

The survey from which this record for the participant was taken.

Labels:

- mobis = The MOBIS introductory survey
- mobis-covid19 = The optional survey at the start of thier participation in MOBIS-COvid19

Format: Character.

Value	Count
The MOBIS introductory survey	3690
The optional survey at the start of thier participation in MOBIS-COvid19	2418

survey_date

The date the participant completed the survey.

Format: Date.

p_language

The correspondence language of the participant.

Labels:

- de = German
- en = English
- fr = French

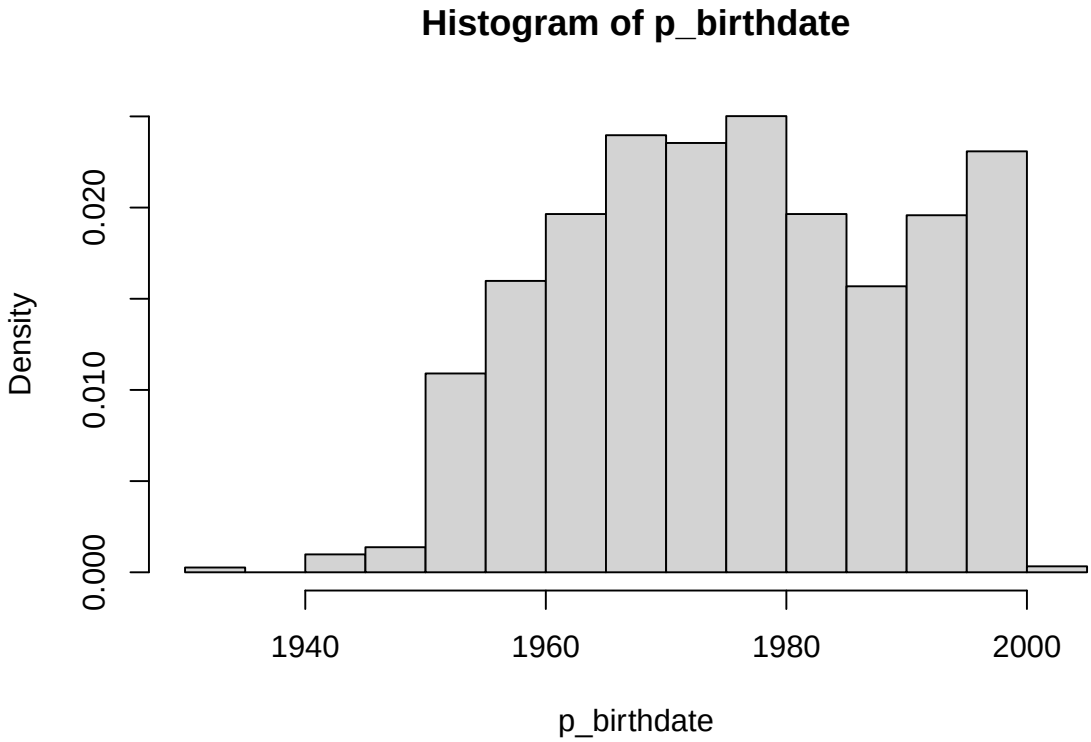
Format: Character.

	German	English	French
Count	4200	391	1517

p_birthdate

The data of birth of the participant.

Format: Numeric.



p_sex

The sex of the participant.

Format: Character.

	female	male
Count	3014	3094

`p_citizenship_swiss`

Is the participant a Swiss citizen.

Format: Character.

Value	Count
Other	232
Switzerland	4622
NA's	1254

`p_citizenship_2`

The second citizenship of the participant, if they are swiss. Otherwise the first citizenship of the participant.

Format: Character.

`p_citizenship_3`

Any further citizenship of the participant.

Format: Character.

`p_weeklyresident`

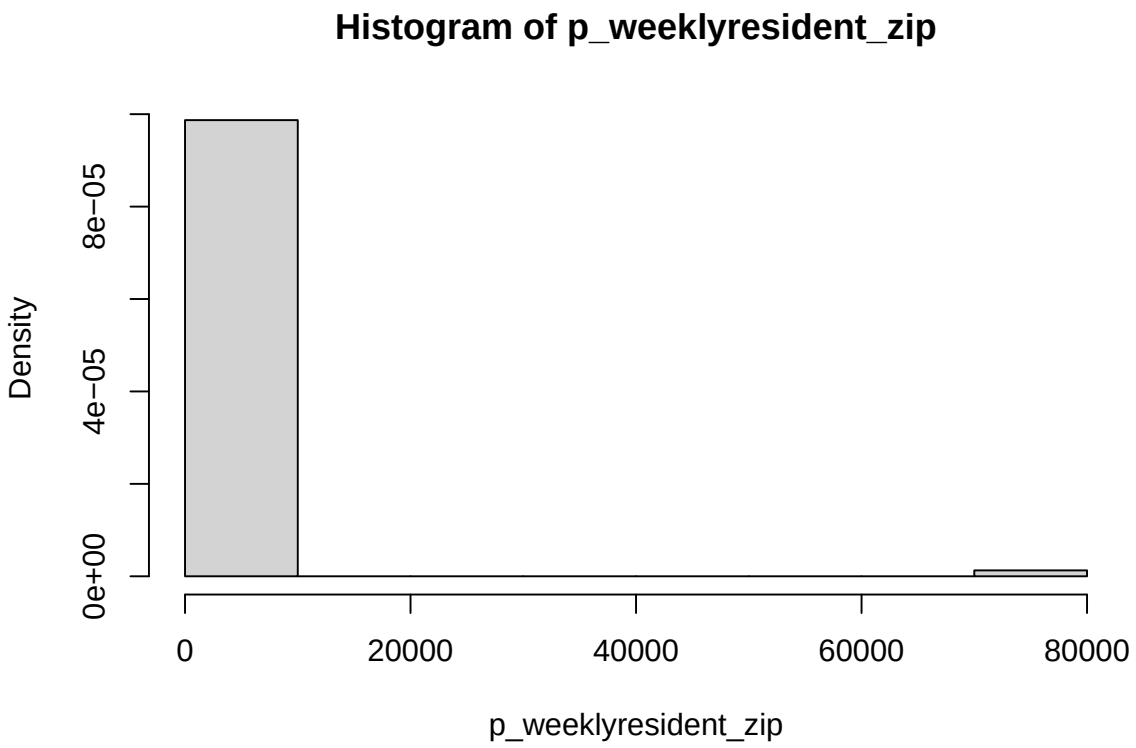
Is the participant a weekly commuter - i.e. do they have a different address during the work week to their home address.

Format: Logical.

`p_weeklyresident_zip`

The postcode of the second home, when different to the household location.

Format: Numeric.



`p_educ`

The participants highest completed level of education.

Format: Character.

	higher	mandatory	secondary
Count	2829	383	2896

p_occup_1_employed

Normal employment

Format: Character.

Value	Count
employed	4675
NA's	1433

p_occup_1_intraining

Student/Trainee

Format: Character.

Value	Count
intraining	659
NA's	5449

p_occup_1_athome

At home - i.e. Housewife/stay-at-home-dad

Format: Character.

Value	Count
athome	205
NA's	5903

p_occup_1_lookingforwork

Looking for work

Format: Character.

Value	Count
lookingforwork	71
NA's	6037

p_occup_1_noteconactive

Not economically active

Format: Character.

Value	Count
noteconactive	65
NA's	6043

p_occup_1_retired

Retired

Format: Character.

Value	Count
retired	376
NA's	5732

p_occup_1_invalid

Unable to work due to disability

Format: Character.

Value	Count
invalid	40
NA's	6068

p_occup_1_military

Compulsory Military Service

Format: Character.

Value	Count
military	8
NA's	6100

p_occup_1_other

Other

Format: Character.

Value	Count
other	332
NA's	5776

p_occup_1_other_text

Free text input if the participant selected other

Format: Character.

p_occup_employed

Whether the employment is self employed or not

Format: Character.

Value	Count
employed	4364
self-employed	311
NA's	1433

p_occup_fulltime

Fulltime, more than part-time, part-time

Labels:

- morethan_parttime = More than parttime
- parttime = Part-time
- fulltime = Full-time

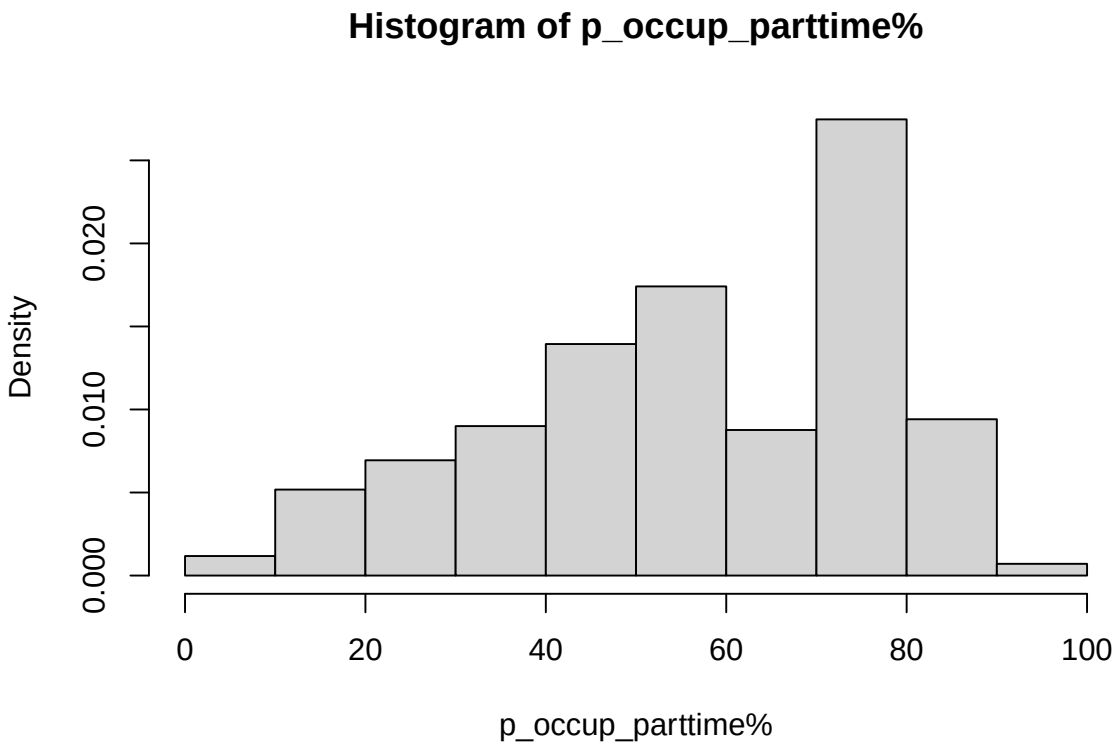
Format: Character.

	Full-time	More than parttime	Part-time	NA's
Count	3033	525	1175	1375

`p_occup_parttime%`

The percentage of a full-time load, if part-time

Format: Numeric.



`p_homeoffice_nocoron`

If home office was possible before the pandemic

Format: Logical.

`p_homeoffice_nocdays`

Number of days per week in home-office before the pandemic

Format: Numeric.

`p_homeoffice_coron`

If home office was possible during the pandemic

Format: Logical.

`p_occup_kurzarbeit`

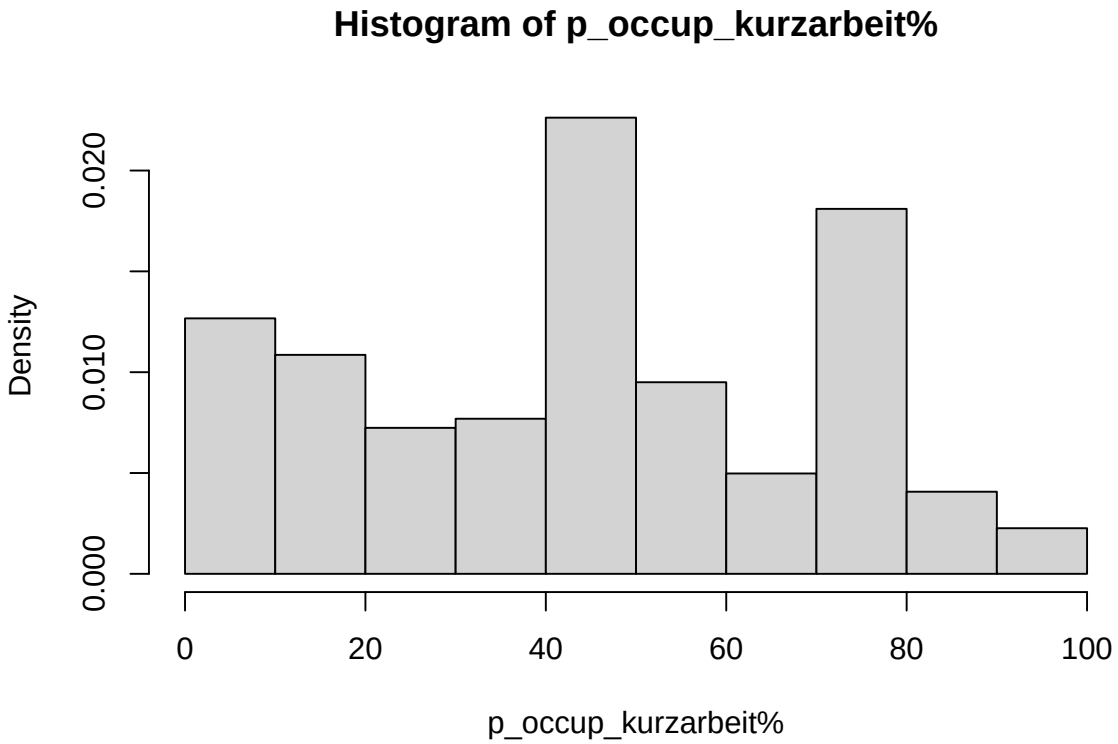
Whether the participant was under kurzarbeit conditions at the time of the survey

Format: Logical.

`p_occup_kurzarbeit%`

The adjusted work percentage under kurzarbeit (percentage of a full-time load)

Format: Numeric.



p_occup_forcedleave

Whether the participant has been required to take forced-leave due to the pandemic

Format: Logical.

p_occup_regular

Is the participant's job consist of regular hours

Format: Logical.

p_occup_shift

Does the job involve shift work?

Format: Logical.

p_occup_educ

If the participant is in training, what is the form of training: professional_training; pupil; student

Format: Character.

Value	Count
professional_training	34
pupil	7
student	160
NA's	5907

p_occup_location

Does the participant have a regular place of work (i.e. a fixed address)

Format: Logical.

p_occup_locationname

A free-text field nominating the place of work - i.e. address, company name, etc.

Format: Character.

p_driverslicence

Does the participant hold a drivers license?

Format: Logical.

p_caraccess

Does the participant have access to a car?

Format: Character.

	after_consultation	always	noaccess
Count	627	5231	250

p_othermobtools

Are other mobility tools available?

Format: Logical.

p_commutemode_walk

Does the participant walk to work

Format: Character.

Value	Count
walk	420
NA's	5688

`p_commutemode_bike`

Does the participant bike to work

Format: Character.

Value	Count
bike	325
NA's	5783

`p_commutemode_ebike`

Does the participant e-bike to work

Format: Character.

Value	Count
ebike	174
NA's	5934

`p_commutemode_escooter`

Does the participant ride an e-scooter to work

Format: Character.

Value	Count
escooter	19
NA's	6089

`p_commutemode_car`

Does the participant drive a car to work

Format: Character.

Value	Count
car	1260
NA's	4848

`p_commutemode_moto`

Does the participant ride a motorbike/moped to work

Format: Character.

Value	Count
moto	139
NA's	5969

`p_commutemode_bustram`

Does the participant take the bus or tram to work

Format: Character.

Value	Count
bustram	553
NA's	5555

`p_commutemode_metro`

Does the participant take the metro (u-bahn) to work

Format: Character.

Value	Count
metro	49
NA's	6059

`p_commutemode_train`

Does the participant take the train to work

Format: Character.

Value	Count
train	566
NA's	5542

`p_commutemode_other`

Does the participant use an other mode to get to work - detailed in p_commutemode_other_text.

Format: Character.

Value	Count
other	76
NA's	6032

`p_commutemode_other_text`

An 'other' mode indicated by the participant

Format: Character.

p_ptmobtool_none

Does the participant not own any public transport subscriptions

Format: Character.

Value	Count
none	1946
NA's	4162

p_ptmobtool_ga1cl

Does the participant own a 1st class national railway pass

Format: Character.

Value	Count
ga1cl	79
NA's	6029

p_ptmobtool_ga2cl

Does the participant own a 2nd class national railway pass?

Format: Character.

Value	Count
ga2cl	257
NA's	5851

p_ptmobtool_ht

Does the participant own a half-fare card (halbtax)?

Format: Character.

Value	Count
ht	3032
NA's	3076

p_ptmobtool_regional

Does the participant own a regional subscription?

Format: Character.

Value	Count
regional	270
NA's	5838

p_ptmobtool_point_to_point

Does the participant own a subscription for a point to point service?

Format: Character.

Value	Count
point_to_point	58
NA's	6050

p_ptmobtool_multiple_journey

Does the participant use a mutiple-journey discount pass?

Format: Character.

Value	Count
multiple_journey	207
NA's	5901

p_ptmobtool_seven25

Does the participant own a gleis-7 subscription?

Format: Character.

Value	Count
seven25	7
NA's	6101

p_ptmobtool_other

Does the participant own a different public transport subscription, specfied in _text?

Format: Character.

Value	Count
other	152
NA's	5956

p_ptmobtool_other_text

a different public transport subscription owned by the participant

Format: Character.

Value	Count
20 Tageskarten/Jahr	1
Abonnement mensuel TL	1
Abos zones 110-121	1
BahnCard25	1
Bonuspass	1
Fairtiqu	1
Für den nicht zuhause wohnenden Sohn (15) ein Verbund Abo	1
General Abonnement FVP (Personal)	1
häufig kombiniert mit einem Monatsklassenwechsel	1
P+R + Unireso	1
regional year pass	1
Tageskarten	1
TNW poir mon mari	1
ZVV Bonuspass, 12 Monate für ganz Zürich. (Zug, Bus, Tram, Schiff, Seilbahn)	1
NA's	6094

p_ptmobtool_ga

Format: Logical.

p_disabled_nolimitation

Does the participant have no mobility limitations

Format: Character.

Value	Count
nolimitation	2344
NA's	3764

p_disabled_car

Is the participant unable to drive due to disability?

Format: Character.

Value	Count
car	31
NA's	6077

p_disabled_pt

Is the participant unable to take public transport due to disability?

Format: Character.

Value	Count
pt	26
NA's	6082

`p_disabled_bike`

Is the participant unable to ride a bike due to disability?

Format: Character.

Value	Count
bike	30
NA's	6078

`p_disabled_walk`

Is the participant unable to walk due to disability?

Format: Character.

Value	Count
walk	25
NA's	6083

`hh_postcode`

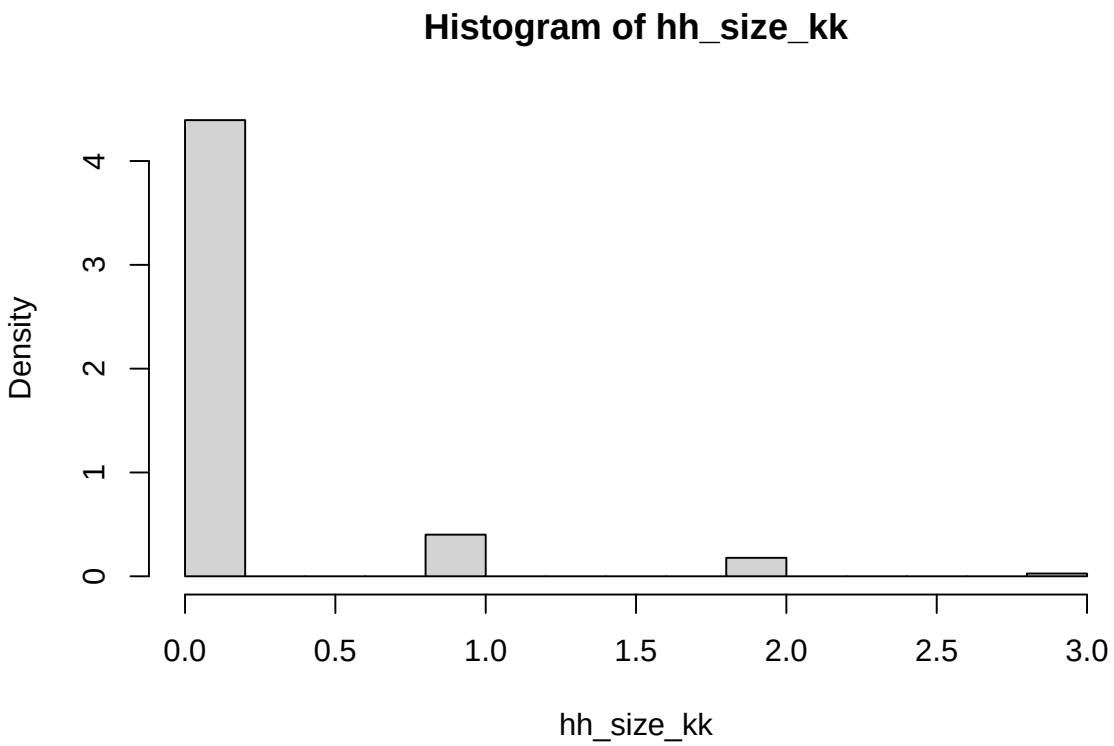
The postcode of the participants main household

Format: Numeric.

`hh_size_kk`

Number of babies (kleinkinder) in the household

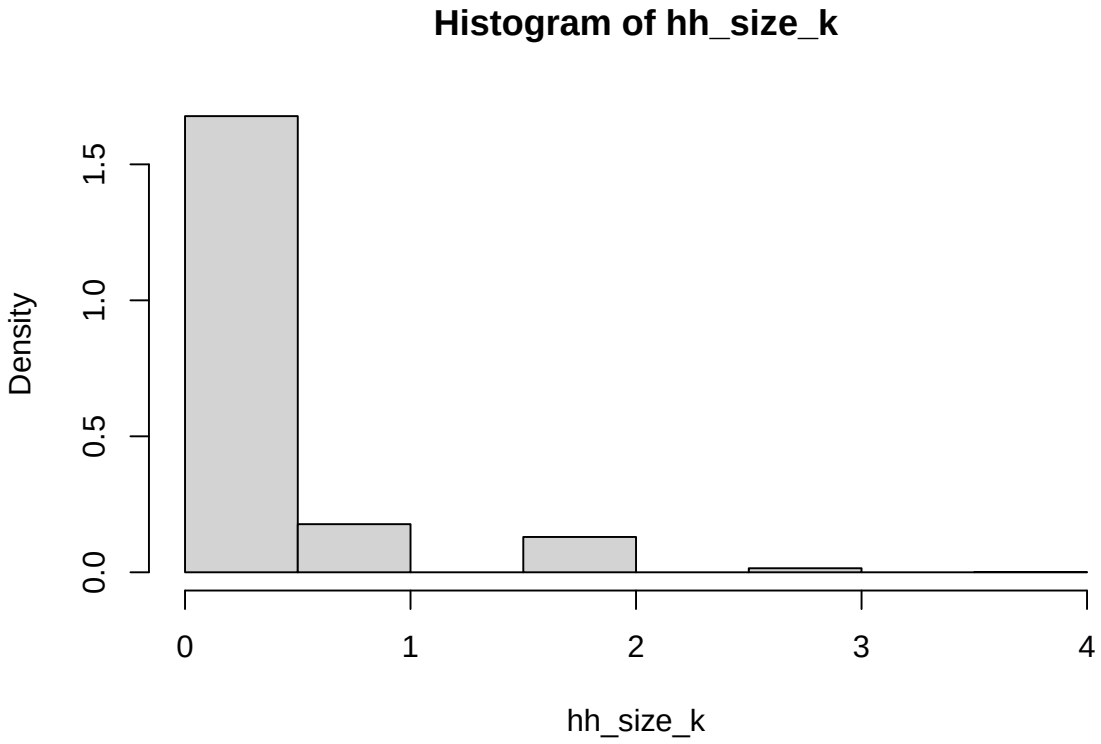
Format: Numeric.



`hh_size_k`

Number of children (Kinder) in the household

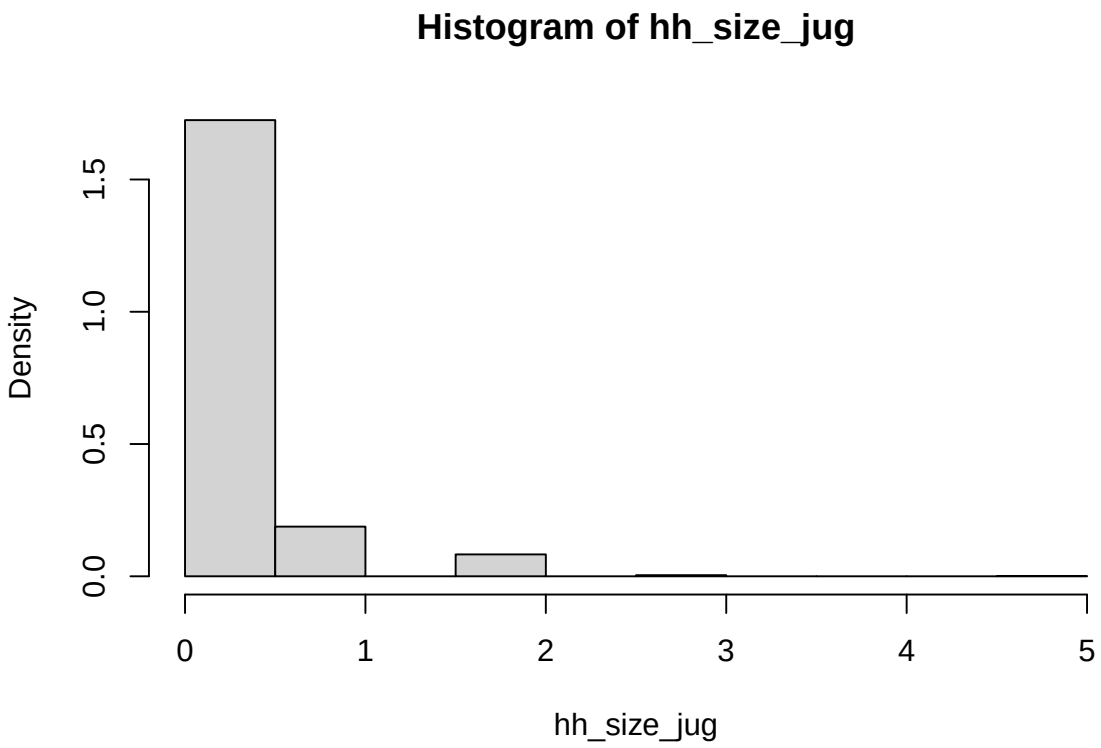
Format: Numeric.



`hh_size_jug`

Number of small teenagers (Jungend) in the household

Format: Numeric.



`hh_size_erw`

Number of adults (kleinkinder) in the household

Format: Character.

Value	Count
> 5	8
0	79
1	476
2	1378
3	291
4	156
5	30
NA's	3690

`hh_income`

The household income

Format: Character.

Value	Count
12 001 - 16 000 CHF	936
4 000 CHF or less	420
4 001 - 8 000 CHF	1756
8 001 - 12 000 CHF	1790
More than 16 000 CHF	593
Prefer not to say	613

`hh_dog`

Does the household have one or more dogs?

Format: Logical.

hh_privatemobtool_car

Format: Character.

Value	Count
> 5	8
0	230
1	1136
2	863
3	148
4	29
5	4
NA's	3690

hh_privatemobtool_moto

Format: Character.

Value	Count
> 5	1
0	1882
1	416
2	89
3	22
4	7
5	1
NA's	3690

`hh_privatemobtool_bike`

Format: Character.

Value	Count
> 5	131
0	600
1	439
2	547
3	291
4	302
5	108
NA's	3690

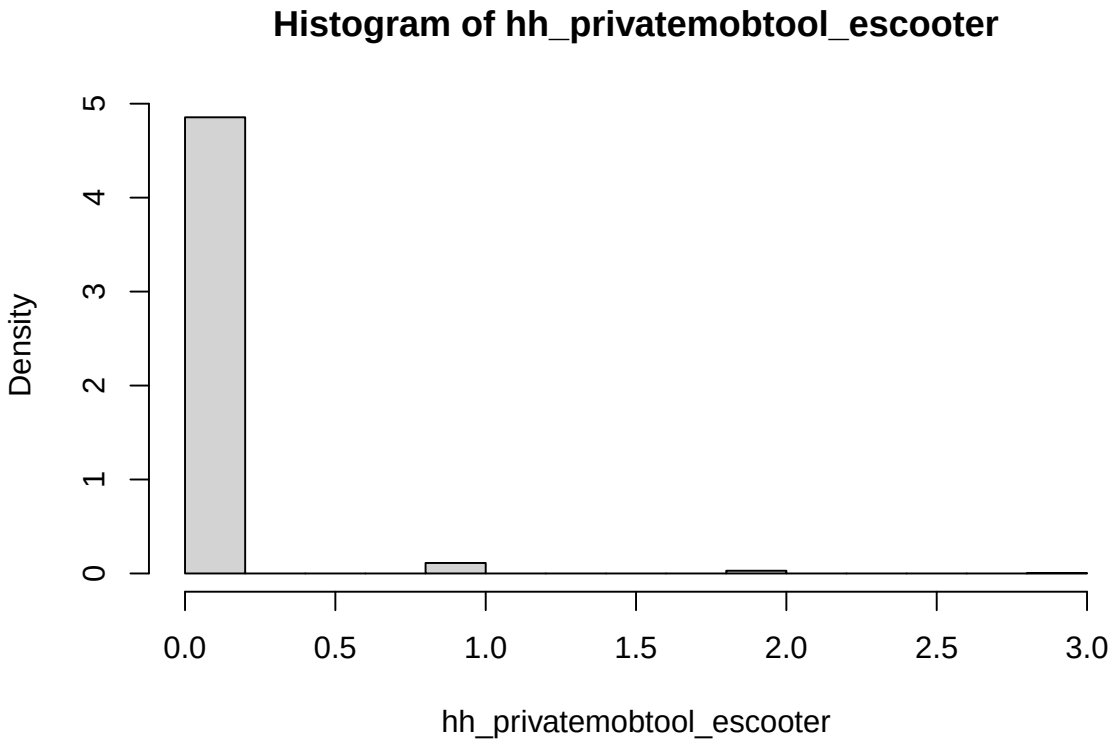
`hh_privatemobtool_ebike`

Format: Character.

Value	Count
> 5	1
0	1802
1	391
2	201
3	20
4	3
NA's	3690

hh_privatemobtool_escooter

Format: Numeric.



hh_privatemobtool_other

Format: Character.

Value	Count
> 5	1
0	2271
1	92
2	28
3	15
4	9
5	2
NA's	3690

`hh_privatemobtool_other_text`

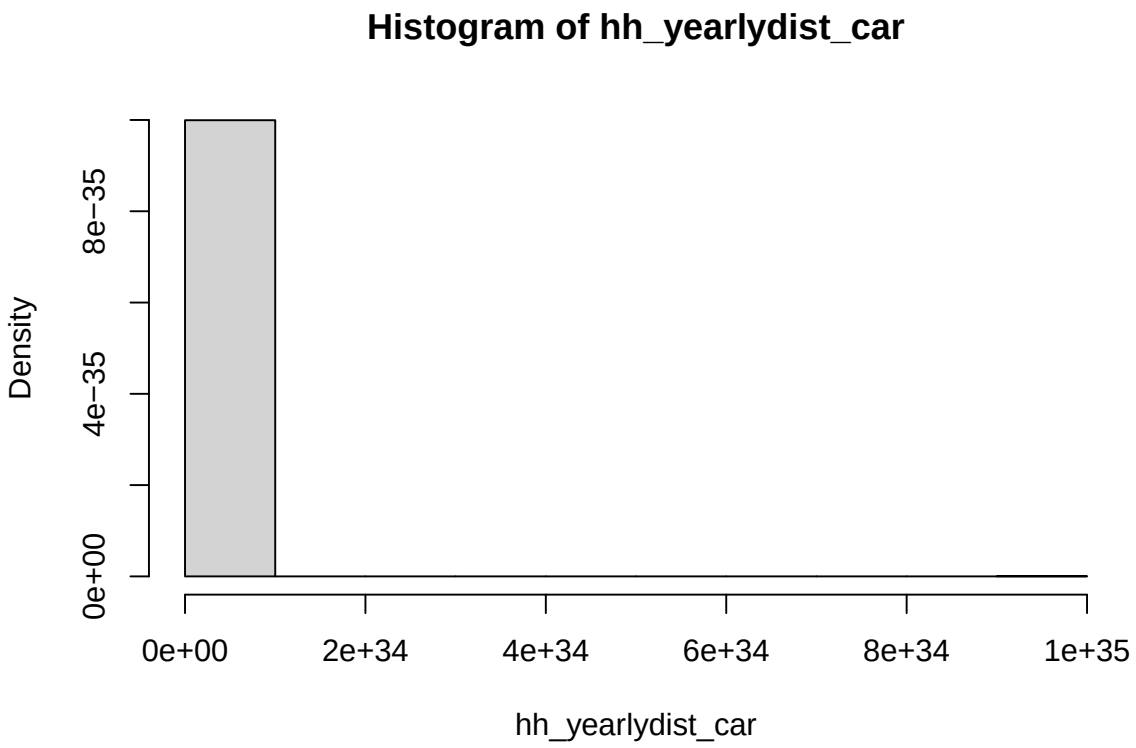
Format: Character.

`hh_yearlydist_car`

The yearly distance travelled by car by the household?

Format: Numeric.

Min.	1st Qu.	Median	Mean	3rd Qu.	Max.	NA's
0	7500	12000	4.653e+31	20000	1e+35	3959



hh_parkinglot

The number of parking spaces available to the household

Format: Character.

Value	Count
>3	193
1	794
2	844
3	251
none	120
NA's	3906

day_covid19p

Format: Character.

day_covid19psym

Format: Character.

day_covid19hh

Format: Character.

day_covid19hhsymp

Format: Character.

day_outworking

Format: Numeric.

day_homeworking

Format: Numeric.

day_visitsathome

Format: Numeric.

day_visitsatothers

Format: Numeric.

day_leisureact

Format: Numeric.

day_groceryshopping

Format: Numeric.

day_grocerydelivery

Format: Numeric.

day_grocerydel_other

Format: Numeric.

day_fooddelivery

Format: Numeric.

`day_foodext`

Format: Numeric.

`day_packetsathome`

Format: Character.

`day_postathome`

Format: Numeric.

`day_postext`

Format: Numeric.

`day_newspaper_weekdays`

Format: Character.

`day_newspaper_saturday`

Format: Numeric.

`day_newspaper_sunday`

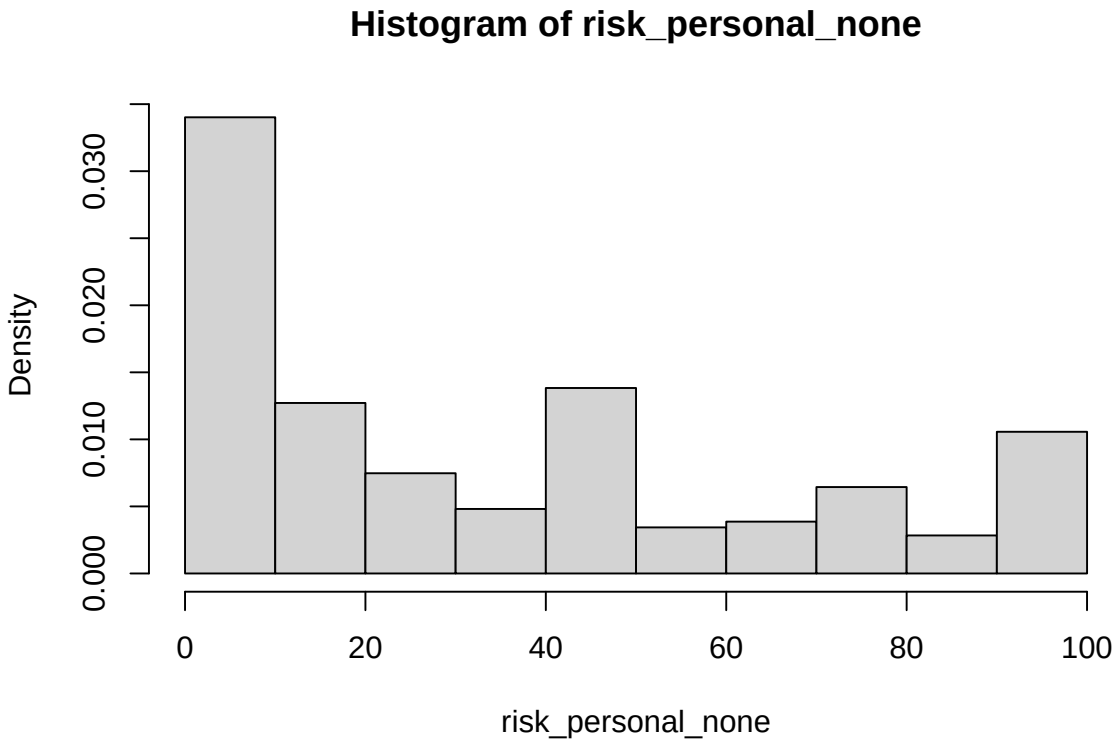
Format: Numeric.

`day_overnightstay`

Format: Numeric.

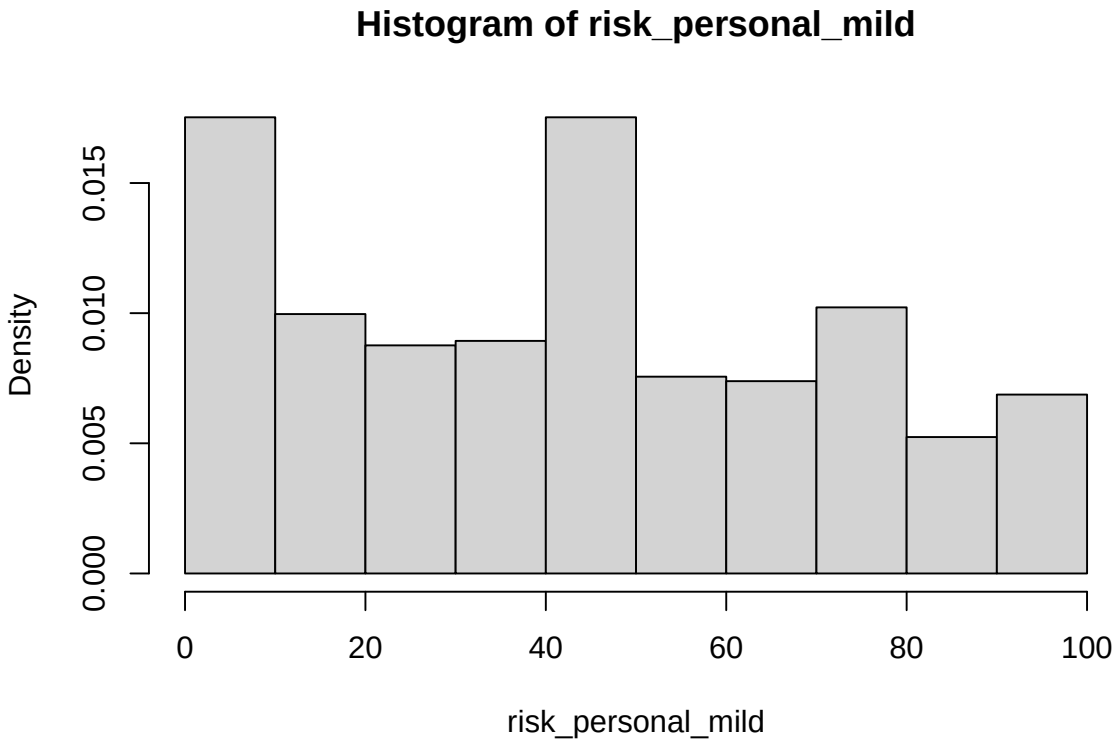
risk_personal_none

Format: Numeric.



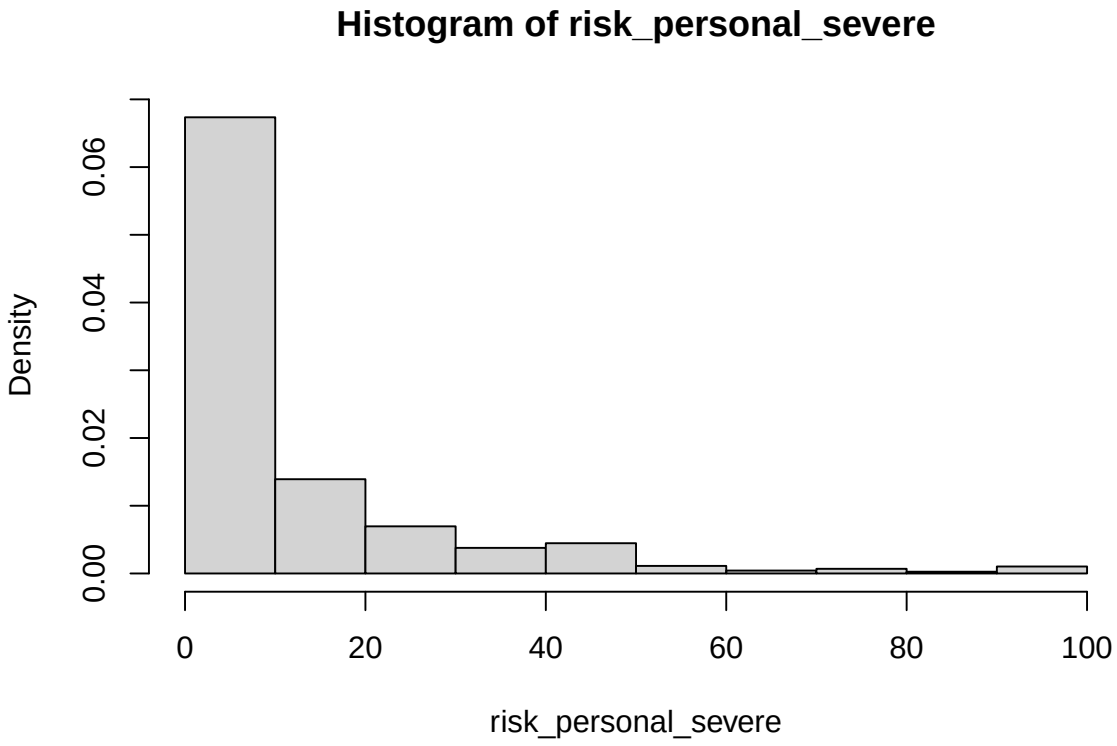
risk_personal_mild

Format: Numeric.



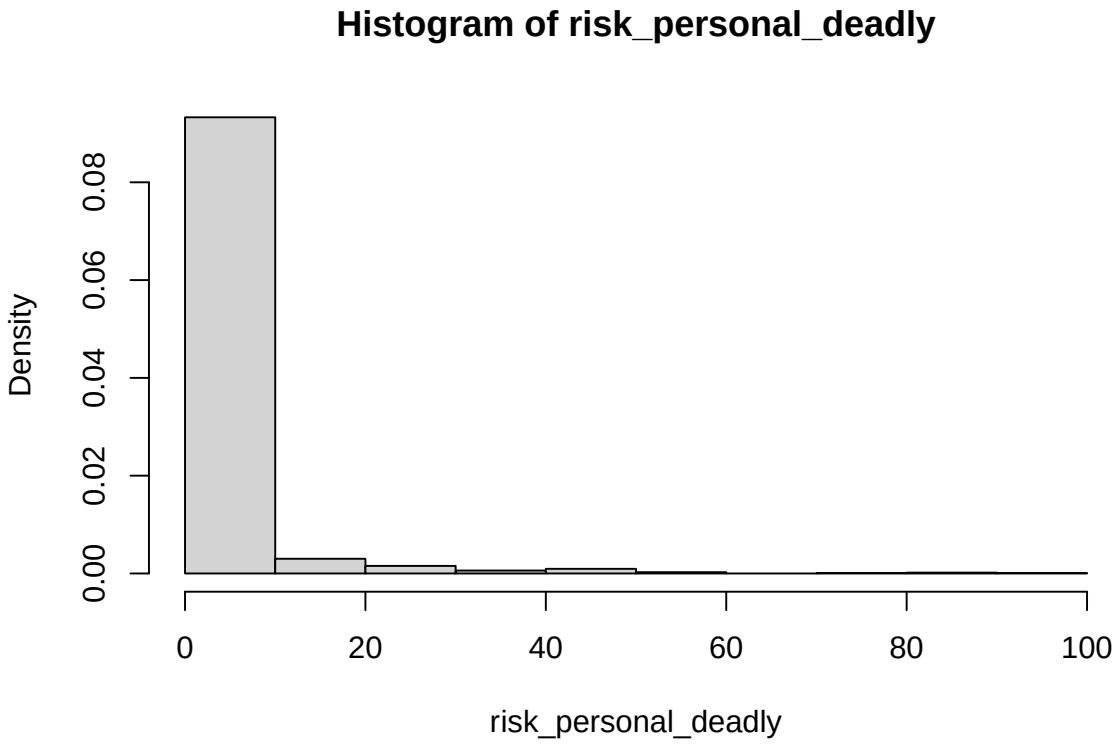
`risk_personal_severe`

Format: Numeric.



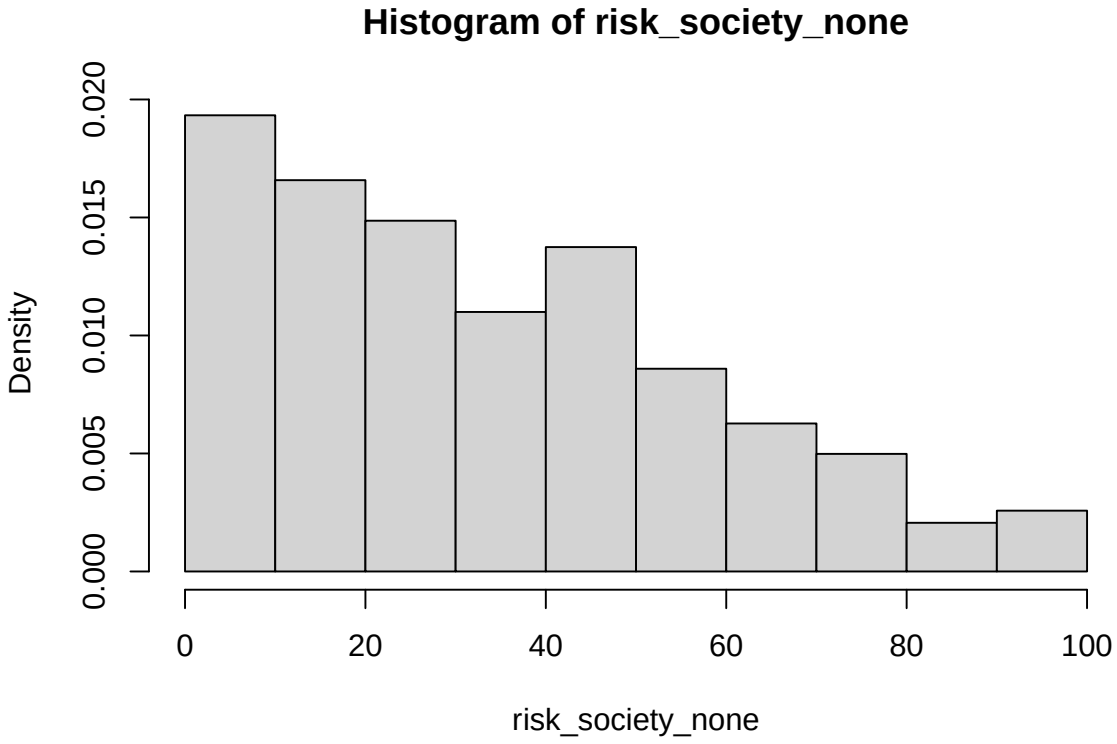
`risk_personal_deadly`

Format: Numeric.



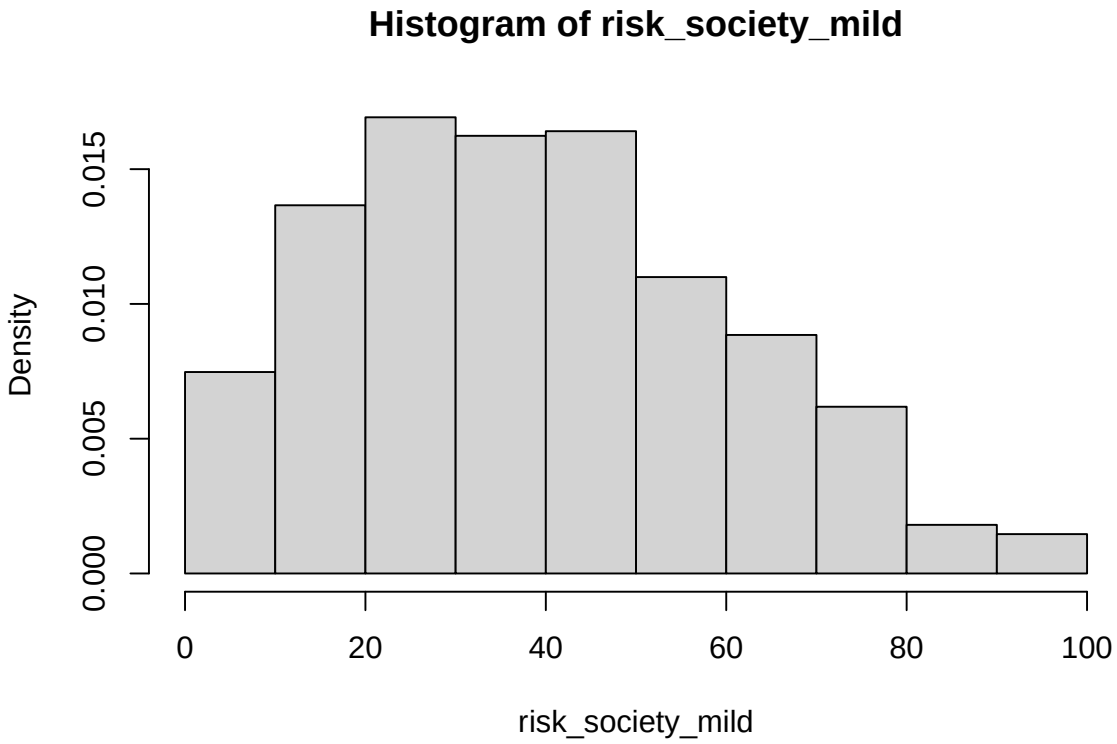
`risk_society_none`

Format: Numeric.



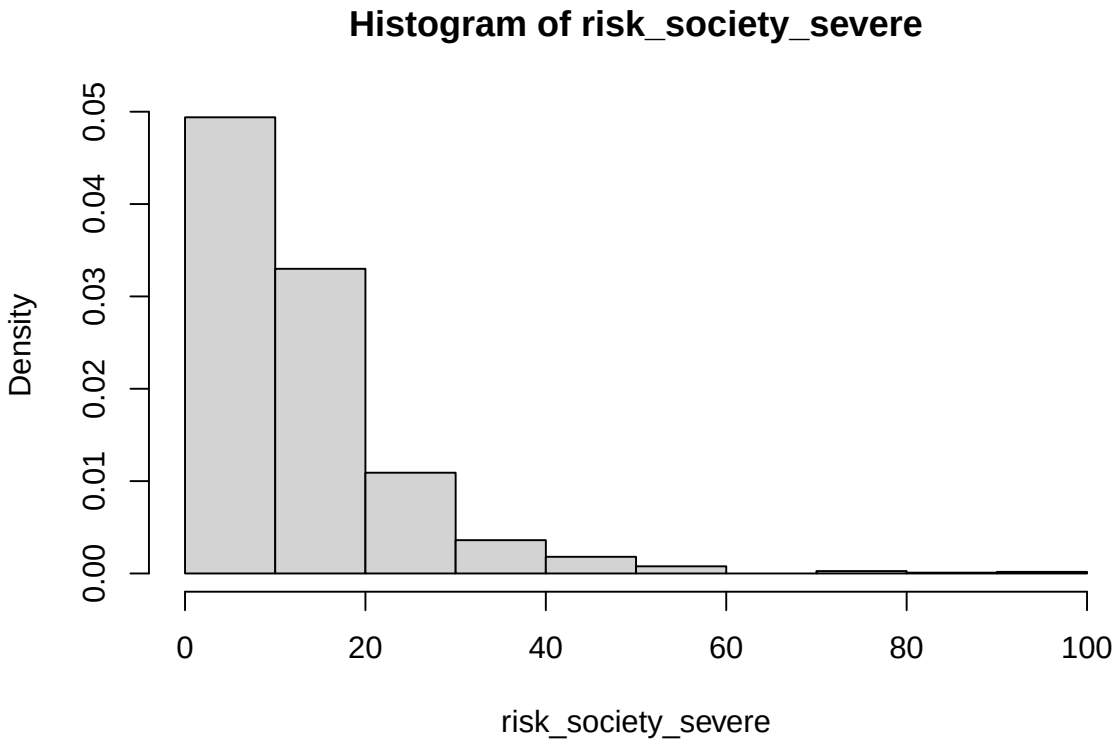
`risk_society_mild`

Format: Numeric.



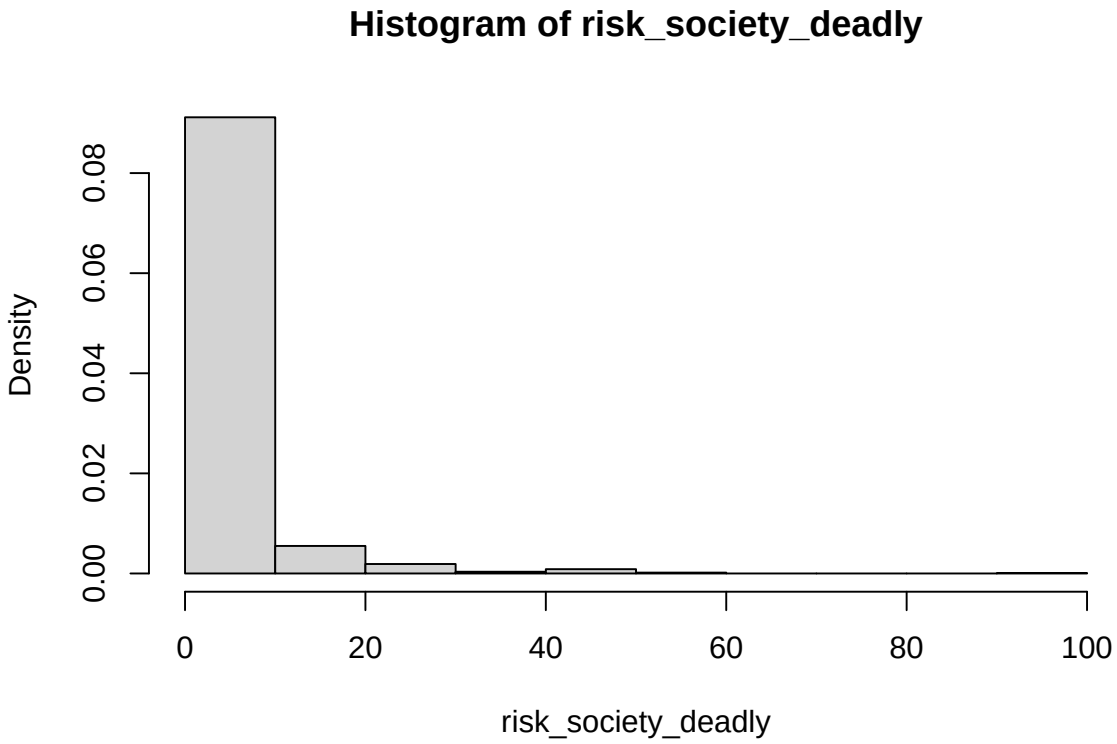
`risk_society_severe`

Format: Numeric.



`risk_society_deadly`

Format: Numeric.



`p_homeoffice_cdays`

Number of days per week in home-office during the pandemic

Format: Numeric.

`p_privatemobtool_car`

Format: Character.

	after_consultation	always	noaccess
Count	627	5231	250

p_privatemobtool_moto

Format: Character.

	after_consultation	always	noaccess
Count	164	978	4966

p_privatemobtool_bike

Format: Character.

	after_consultation	always	noaccess
Count	228	4384	1496

p_privatemobtool_ebike

Format: Character.

	after_consultation	always	noaccess
Count	92	1049	4967

p_privatemobtool_escooter

Format: Character.

Value	Count
after_consultation	18
always	57
noaccess	2343
NA's	3690

p_transportusage_owncar

Labels:

- never = never
- 1-3dayspermonth = 1 - 3 days per month
- less = less than 3 days per month
- 1dayperweek = 1 day per week
- 2daysperweek = 2 days per week
- more = 3 or more days per week

Format: Character.

Value	Count
1 - 3 days per month	52
1 day per week	94
2 days per week	156
less than 3 days per month	16
3 or more days per week	518
never	7
NA's	5265

p_transportusage_rentedcar

Labels:

- never = never
- 1-3dayspermonth = 1 - 3 days per month
- less = less than 3 days per month
- 1dayperweek = 1 day per week
- 2daysperweek = 2 days per week
- more = 3 or more days per week

Format: Character.

Value	Count
1 - 3 days per month	5
1 day per week	2
2 days per week	0
less than 3 days per month	136
3 or more days per week	2
never	1109
NA's	4854

p_transportusage_carsharing

Labels:

- never = never
- 1-3dayspermonth = 1 - 3 days per month
- less = less than 3 days per month
- 1dayperweek = 1 day per week
- 2daysperweek = 2 days per week
- more = 3 or more days per week

Format: Character.

Value	Count
1 - 3 days per month	16
1 day per week	2
2 days per week	1
less than 3 days per month	81
3 or more days per week	2
never	1152
NA's	4854

p_transportusage_ownmoto

Labels:

- never = never
- 1-3dayspermonth = 1 - 3 days per month
- less = less than 3 days per month
- 1dayperweek = 1 day per week
- 2daysperweek = 2 days per week
- more = 3 or more days per week

Format: Character.

Value	Count
1 - 3 days per month	34
1 day per week	19
2 days per week	18
less than 3 days per month	38
3 or more days per week	36
never	6
NA's	5957

p_transportusage_householdcar

Labels:

- never = never
- 1-3dayspermonth = 1 - 3 days per month
- less = less than 3 days per month
- 1dayperweek = 1 day per week
- 2daysperweek = 2 days per week
- more = 3 or more days per week

Format: Character.

Value	Count
1 - 3 days per month	187
1 day per week	195
2 days per week	134
less than 3 days per month	239
3 or more days per week	94
never	405
NA's	4854

p_transportusage_carpooling

Labels:

- never = never
- 1-3dayspermonth = 1 - 3 days per month
- less = less than 3 days per month
- 1dayperweek = 1 day per week
- 2daysperweek = 2 days per week
- more = 3 or more days per week

Format: Character.

Value	Count
1 - 3 days per month	48
1 day per week	28
2 days per week	10
less than 3 days per month	173
3 or more days per week	12
never	983
NA's	4854

p_transportusage_appbasedservice

Labels:

- never = never
- 1-3dayspermonth = 1 - 3 days per month
- less = less than 3 days per month
- 1dayperweek = 1 day per week
- 2daysperweek = 2 days per week
- more = 3 or more days per week

Format: Character.

Value	Count
1 - 3 days per month	23
1 day per week	1
2 days per week	1
less than 3 days per month	110
3 or more days per week	6
never	1113
NA's	4854

p_transportusage_train

Labels:

- never = never
- 1-3dayspermonth = 1 - 3 days per month
- less = less than 3 days per month
- 1dayperweek = 1 day per week
- 2daysperweek = 2 days per week
- more = 3 or more days per week

Format: Character.

Value	Count
1 - 3 days per month	205
1 day per week	93
2 days per week	111
less than 3 days per month	400
3 or more days per week	239
never	206
NA's	4854

p_transportusage_tram

Labels:

- never = never
- 1-3dayspermonth = 1 - 3 days per month
- less = less than 3 days per month
- 1dayperweek = 1 day per week
- 2daysperweek = 2 days per week
- more = 3 or more days per week

Format: Character.

Value	Count
1 - 3 days per month	119
1 day per week	46
2 days per week	71
less than 3 days per month	397
3 or more days per week	102
never	519
NA's	4854

p_transportusage_bus

Labels:

- never = never
- 1-3dayspermonth = 1 - 3 days per month
- less = less than 3 days per month
- 1dayperweek = 1 day per week
- 2daysperweek = 2 days per week
- more = 3 or more days per week

Format: Character.

Value	Count
1 - 3 days per month	189
1 day per week	98
2 days per week	96
less than 3 days per month	400
3 or more days per week	227
never	244
NA's	4854

p_transportusage_metro

Labels:

- never = never
- 1-3dayspermonth = 1 - 3 days per month
- less = less than 3 days per month
- 1dayperweek = 1 day per week
- 2daysperweek = 2 days per week
- more = 3 or more days per week

Format: Character.

Value	Count
1 - 3 days per month	19
1 day per week	9
2 days per week	11
less than 3 days per month	170
3 or more days per week	13
never	1032
NA's	4854

p_transportusage_ownbike

Labels:

- never = never
- 1-3dayspermonth = 1 - 3 days per month
- less = less than 3 days per month
- 1dayperweek = 1 day per week
- 2daysperweek = 2 days per week
- more = 3 or more days per week

Format: Character.

Value	Count
1 - 3 days per month	156
1 day per week	86
2 days per week	99
less than 3 days per month	236
3 or more days per week	209
never	79
NA's	5243

p_transportusage_rentedbike

Labels:

- never = never
- 1-3dayspermonth = 1 - 3 days per month
- less = less than 3 days per month
- 1dayperweek = 1 day per week
- 2daysperweek = 2 days per week
- more = 3 or more days per week

Format: Character.

Value	Count
1 - 3 days per month	37
1 day per week	25
2 days per week	39
less than 3 days per month	48
3 or more days per week	75
never	4
NA's	5880

p_transportusage_bikesharing

Labels:

- never = never
- 1-3dayspermonth = 1 - 3 days per month
- less = less than 3 days per month
- 1dayperweek = 1 day per week
- 2daysperweek = 2 days per week
- more = 3 or more days per week

Format: Character.

Value	Count
1 - 3 days per month	12
1 day per week	6
2 days per week	5
less than 3 days per month	39
3 or more days per week	6
never	1186
NA's	4854

p_transportusage_ownescooter

Labels:

- never = never
- 1-3dayspermonth = 1 - 3 days per month
- less = less than 3 days per month
- 1dayperweek = 1 day per week
- 2daysperweek = 2 days per week
- more = 3 or more days per week

Format: Character.

Value	Count
1 - 3 days per month	3
1 day per week	5
2 days per week	3
less than 3 days per month	3
3 or more days per week	8
never	4
NA's	6082

p_transportusage_escootersharing

Labels:

- never = never
- 1-3dayspermonth = 1 - 3 days per month
- less = less than 3 days per month
- 1dayperweek = 1 day per week
- 2daysperweek = 2 days per week
- more = 3 or more days per week

Format: Character.

Value	Count
1 - 3 days per month	9
1 day per week	2
2 days per week	2
less than 3 days per month	33
3 or more days per week	1
never	1207
NA's	4854

p_ebike_type

Which class of e-bike does the participant own. Bikes over 45km/h require registration in Switzerland.

Format: Character.

Value	Count
<= 25kmh	182
<= 45kmh	46
NA's	5880

`car_fuel`

The fuel type - Petrol, Diesel, Hybrid or Electric

Format: Character.

Value	Count
diesel	258
electric	17
gasoline	521
hybrid	41
other	6
NA's	5265

`car_prodyear`

The year range of production

Format: Character.

Value	Count
<=1992	5
>=2015	393
1993 - 1996	6
1997 - 2000	17
2001 - 2005	52
2006 - 2010	163
2011 - 2014	199
dont know	8
NA's	5265

`car_size`

One of: medium car, large car, small car, minivan, luxury sport car, off road car

Format: Character.

Value	Count
luxury sport car	14
medium large car	389
minivan	90
off road car	147
small car	203
NA's	5265

`car_enginesize`

In liters

Format: Character.

Value	Count
<1.4	150
>2.0	143
1.4 - 2.0	445
dont know	105
NA's	5265

p_main_employment

The main employment out of the p_occup_1_* fields

Labels:

- intraining = Student or Apprentice

Format: Character.

	employed	Student or Apprentice	other	retired	self_employed
Count	4443	481	361	351	232

	unemployed
Count	240

hh_size_total

The total number of inhabitants in the household

Format: Character.

Value	Count
1	881
2	1948
3	1223
4	1514
5 or more	524
NA's	18

p_occup_1_unemployed

Umemployed

Format: Logical.

`p_ptmobtool_verbund`

Does the participant own a subscription to a particular transport area (similar to a regional subscription)

Format: Character.

Value	Count
verbund	584
NA's	5524

`finished_mobis_study`

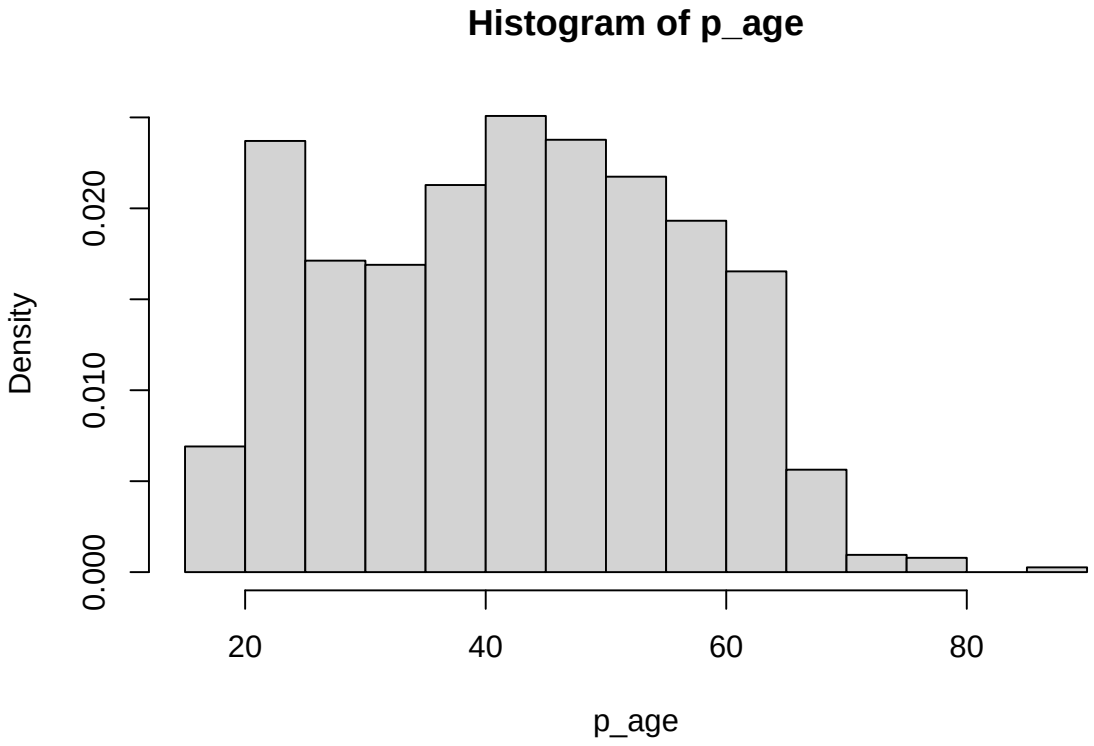
Did the pariticpant finish the original MOBIS study?

Format: Logical.

p_age

The age of the participant at the time of the survey

Format: Numeric.



p_age_group

The age bracket of the participant (in Quintiles)

Format: Factor.

p_occup_postcode

The postcode of the main place of work

Format: Numeric.

`hh_kanton`

The canton of the participant's main household, based on the postcode. Where a postcode overlaps multiple kantons, the Kanton at the center of the postcode is taken

Format: Character.

`gen_accessibility`

The overall accessiblity of the participant's residential location, calculated using Loder et al. (2018)

Format: Character.

`oev_accessibility`

The public transport accessiblity of the participant's residential location, calculated using Loder et al. (2018)

Format: Character.

`miv_accessibility`

The car accessiblity of the participant's residential location, calculated using Loder et al. (2018)

Format: Character.

legs: File description

Title: legs dataset

Contents: The trip legs collected through the Catch-my-Day app. The raw data is stored on a postgres database, which also includes the route geometries and waypoints

Data collection: Catch-my-Day App / Motiontag

Unit of analysis: Leg/Stage

File structure: DataFrame, with start, midpoint and end locations indicated by x,y fields in EPSG:2056 projection

File location: tracking/legs.rda

Number of cases: 3910292.

Variables per record: 23.

legs: Variables

`participant_id`

The id of the participant.

Format: Character.

`leg_id`

This is actually the leg id, but it was previously named trip_id due to historical naming conventions from the app developer

Format: Character.

`trip_id`

Indicates the grouping of legs into trips. This is done by grouping legs by the following activity from the activities.csv file (within an hour of the finish time of this leg). This allows legs to be grouped (simply) into trips.

Format: Numeric.

`treatment`

The treatment group of the participant

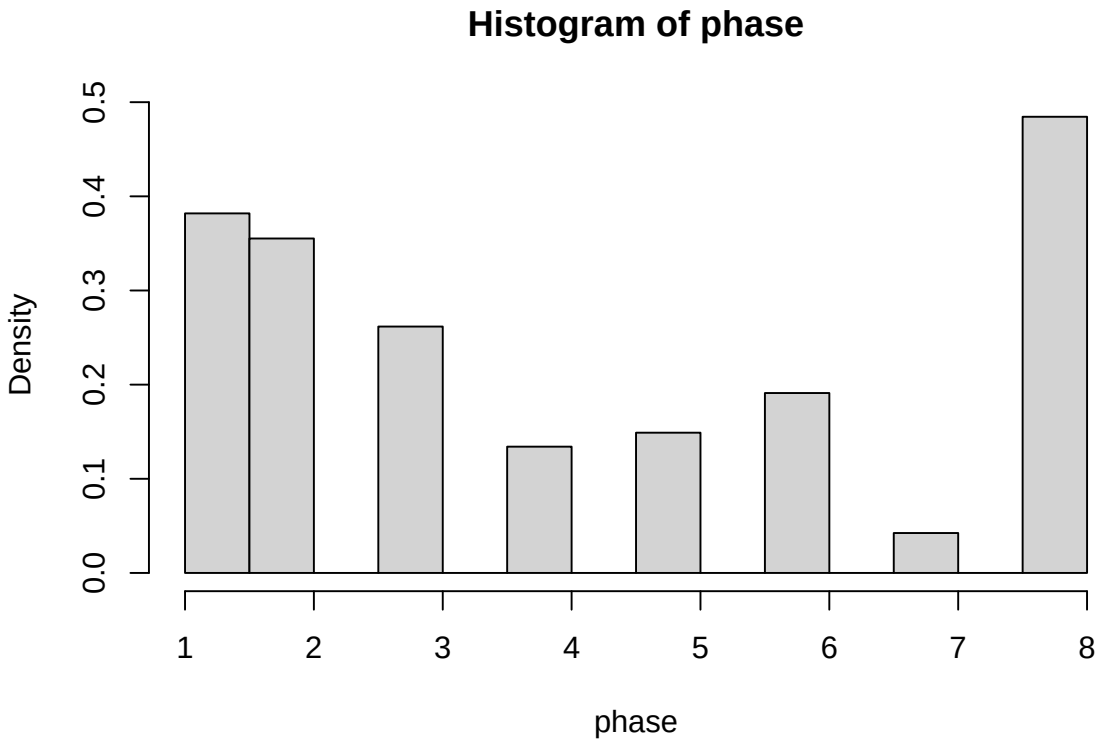
Format: Character.

	Control	Nudging	Pricing
Count	1323169	1321904	1265219

`phase`

The phase for that participant in which the stage took place.See phases.

Format: Numeric.



`started_at`

The start time and date

Format: Posixct.

`started_at_tz`

The timezone of the started_at column

Format: Character.

	Europe/Zurich
Count	3910292

`finished_at`

The finishing time and date

Format: Posixct.

`finished_at_tz`

The timezone of the finished_at column

Format: Character.

	Europe/Zurich
Count	3910292

`length`

The length of the stage (in meters)

Format: Numeric.

`duration`

The duration in seconds

Format: Numeric.

`type`

Type = 'Track' for all legs, 'Stay' for activities.

Format: Character.

	Track
Count	3910292

`mode`

The final transport mode of the stage, after possible correction by the participant.

Format: Character.

Value	Count
Mode::Aerialway	11
Mode::Airplane	2156
Mode::Bicycle	141999
Mode::Bikesharing	51
Mode::Boat	2628
Mode::Bus	153101
Mode::Cablecar	752
Mode::Car	1452028
Mode::CarsharingMobility	1826
Mode::Ebicycle	9006
Mode::Escooter	8
Mode::Etrottinett	755
Mode::Ferry	11
Mode::LightRail	75829
Mode::Motorbike	1195
Mode::MotorbikeScooter	15015
Mode::RegionalTrain	39876
Mode::RidepoolingPikmi	53
Mode::Scooter	376
Mode::Ski	1827
Mode::Subway	11129
Mode::TaxiUber	1962
Mode::Train	47765
Mode::Tram	63925
Mode::Walk	1887008

`detected_mode`

The transport mode of the stage originally detected by the app

Format: Character.

Value	Count
Mode::Aerialway	13
Mode::Airplane	1569
Mode::Bicycle	146118
Mode::Bus	172329
Mode::Car	1439724
Mode::Ebicycle	8062
Mode::Ferry	15
Mode::LightRail	74527
Mode::RegionalTrain	41423
Mode::Subway	9640
Mode::Train	53941
Mode::Tram	59414
Mode::Walk	1903517

`was_confirmed`

If the stage was confirmed in the app by the participant as correct (this was not compulsory)

Format: Logical.

`in_switzerland`

Whether the stage took place within Switzerland or not

Format: Logical.

`start_x`

start point x coordinate (EPSG:2056)

Format: Integer.

`start_y`

start point y coordinate (EPSG:2056)

Format: Integer.

`mid_x`

mid point x coordinate (EPSG:2056)

Format: Integer.

`mid_y`

mid point y coordinate (EPSG:2056)

Format: Integer.

`end_x`

end point x coordinate (EPSG:2056)

Format: Integer.

`end_y`

end point y coordinate (EPSG:2056)

Format: Integer.

`implausible`

For legs after March 2020, an improved segmentation algorithm was used by motiontag. To allow compatibility between the detected legs before and after, poorly detected legs before this change are identified with the implausible variable. The records still indicate a valid leg, but the travel speeds and start and end points may not be accurate

Format: Logical.

activities: File description

Title: activities dataset

Contents: The activites collected through the Catch-my-Day app.

Data collection: Catch-my-Day App / Motiontag

Unit of analysis: Activity at a locatino

File structure: DataFrame, with geometries indicated by x,y fields in EPSG:2056 projection

File location: tracking/activities.rda

Number of cases: 2852312.

Variables per record: 16.

activities: Variables

`participant_id`

The id of the participant

Format: Character.

`activity_id`

Format: Character.

`treatment`

The treatment group of the participant

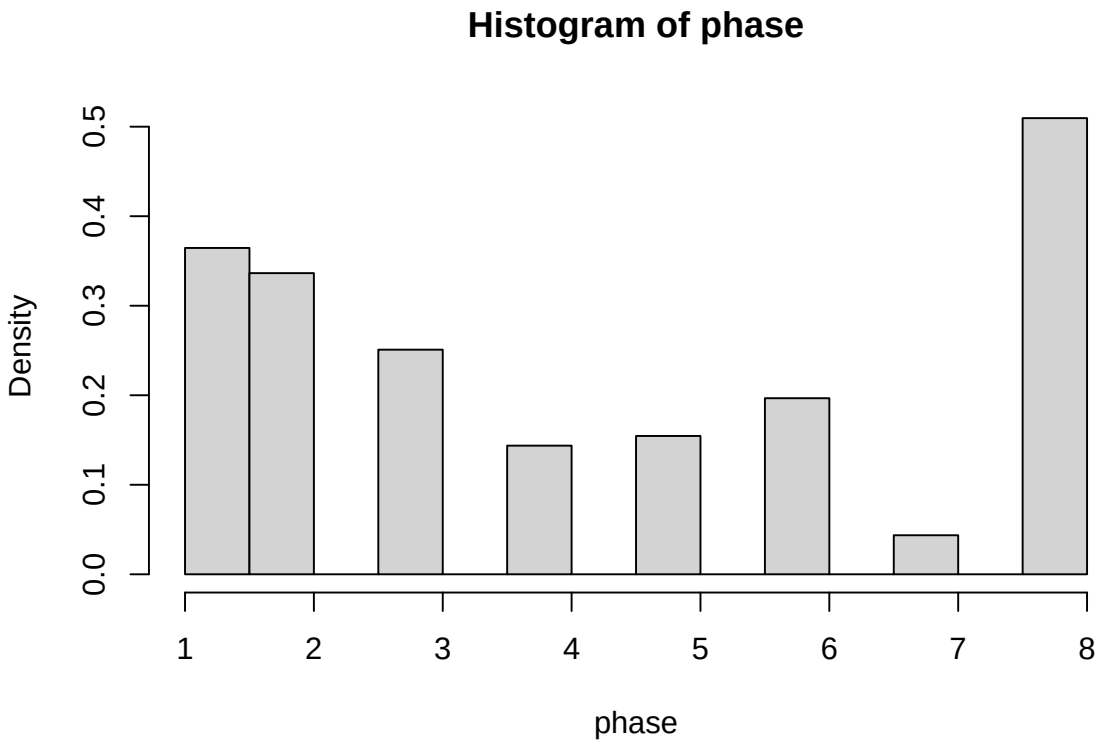
Format: Character.

	Control	Nudging	Pricing
Count	962555	964811	924946

`phase`

The phase for that participant in which the stage took place.See phases.

Format: Numeric.



`started_at`

The start time and date

Format: Posixct.

`started_at_tz`

The timezone of the started_at column

Format: Character.

	Europe/Zurich
Count	2852312

`finished_at`

The finishing time and date

Format: Posixct.

`finished_at_tz`

The timezone of the finished_at column

Format: Character.

	Europe/Zurich
Count	2852312

`duration`

The duration in seconds

Format: Numeric.

`type`

Type = 'Track' for all legs, 'Stay' for activities.

Format: Character.

	Stay
Count	2852312

`labelled_purpose`

The purpose labelled in the catch-my-day app

Format: Character.

Value	Count
assistance	44330
coworking	3111
eat	1530
errand	80513
family_friends	5432
home	487415
homeoffice	14204
leisure	207206
medical_visit	1158
shopping	121470
sport	2025
study	14954
unknown	1531460
wait	73601
work	263903

`imputed_purpose`

The purpose imputed for the activity using an inhouse machine learning method trained on the labelled purposes

Format: Factor.

`was_confirmed`

If the stage was confirmed in the app by the participant as correct (this was not compulsory)

Format: Logical.

`in_switzerland`

Whether the stage took place within Switzerland or not

Format: Logical.

`x`

The X coordinate of the activity location (in EPSG:2056)

Format: Integer.

`y`

The Y coordinate of the activity location (in EPSG:2056)

Format: Integer.

participants_tracking_summary: File description

Title: Summary of tracking milestones/dates for participants

Contents: Key tracking dates of participants - such as app activation date, first tracking date, etc.

Data collection: Catch-my-Day App / Motiontag

Unit of analysis: Participant

File structure: DataFrame

File location: tracking/participants_tracking_summary.rda

Number of cases: 6752.

Variables per record: 8.

participants_tracking_summary: Variables

participant_id

Format: Character.

treatment

Format: Character.

	Control	Nudging	Pricing
Count	2260	2245	2247

app_activation_date

Format: Date.

first_tracking_date

Format: Date.

last_tracking_date

Format: Date.

dropout_date

Format: Posixct.

automatically_dropped_out

Format: Logical.

`finished_tracking_study`

Format: Logical.

daily_mobility_and_activities: File description

Title: Daily mobility data view

Contents: A daily aggregation of key mobility metrics by participant with socio-demographic variables

Data collection: Catch-my-Day App / Motiontag

Unit of analysis: Participant-days

File structure: DataFrame

File location: data_views/daily_mobility_and_activities.rda

Number of cases: 649696.

Variables per record: 48.

daily_mobility_and_activities: Variables

`participant_id`

The id of the participant.

Format: Character.

`p_age_group`

Format: Factor.

p_sex

The sex of the participant.

Format: Character.

Value	Count
female	319095
male	330303
NA's	298

p_citizenship_swiss

Is the participant a Swiss citizen.

Format: Character.

Value	Count
Other	27073
Switzerland	546013
NA's	76610

p_main_employment

The main employment out of the p_occup_1_* fields

Labels:

- intraining = ~ Student or apprentice

Format: Character.

	employed	~ Student or apprentice	other	retired
Count	479771	42125	39665	41029

	self_employed	unemployed	NA's
Count	24238	22570	298

p_caraccess

Does the participant have access to a car?

Format: Character.

Value	Count
after_consultation	55394
always	574845
noaccess	19159
NA's	298

p_educ

The participants highest completed level of education.

Labels:

- secondary = Completed highschool
- higher = ~ Higher education such as University/Diploma
- mandatory = ~ Mandatory

Format: Character.

Value	Count
~ Higher education such as University/Diploma	309986
~ Mandatory	37910
Completed highschool	301502
NA's	298

`p_language`

The correspondence language of the participant.

Labels:

- de = ~ German
- en = ~ English
- fr = ~ French

Format: Character.

	~ German	~ English	~ French	NA's
Count	457864	43897	147637	298

`hh_kanton`

The canton of the participant's main household, based on the postcode. Where a postcode overlaps multiple kantons, the Kanton at the center of the postcode is taken

Format: Character.

`hh_size_total`

The total number of inhabitants in the household

Format: Character.

hh_income

The combined income of the household

Format: Character.

Value	Count
12 001 - 16 000 CHF	107000
4 000 CHF or less	37163
4 001 - 8 000 CHF	171635
8 001 - 12 000 CHF	197631
More than 16 000 CHF	72976
Prefer not to say	62993
NA's	298

hh_gen_accessibility

The overall accessiblity of the participant's residential location, calculated using Loder et al. (2018)

Format: Character.

hh_oev_accessibility

The public transport accessiblity of the participant's residential location, calculated using Loder et al. (2018)

Format: Character.

hh_miv_accessibility

The car accessiblity of the participant's residential location, calculated using Loder et al. (2018)

Format: Character.

working_arrangement

Format: Character.

Value	Count
Home office	107359
Mixture	82010
Work outside home	115094
NA's	345233

kurzarbeit

Format: Character.

Value	Count
Yes	66015
No	280390
NA's	303291

week_start

Format: Date.

date

The date

Format: Date.

day

The day (1-31)

Format: Integer.

`month`

The month of the year

Format: Integer.

`year`

The year

Format: Integer.

	2019	2020	2021
Count	237140	282993	129563

`weekday`

Is the day a weekday or weekend/holiday

Format: Character.

	weekday	weekend
Count	447124	202572

`bicycle`

Total kilometers travelled by bike

Format: Numeric.

`bus`

Total kilometers travelled by bus

Format: Numeric.

`car`

Total kilometers travelled by car

Format: Numeric.

`train`

Total kilometers travelled by train

Format: Numeric.

`tram`

Total kilometers travelled by tram

Format: Numeric.

`walk`

Total kilometers travelled by walking

Format: Numeric.

`total`

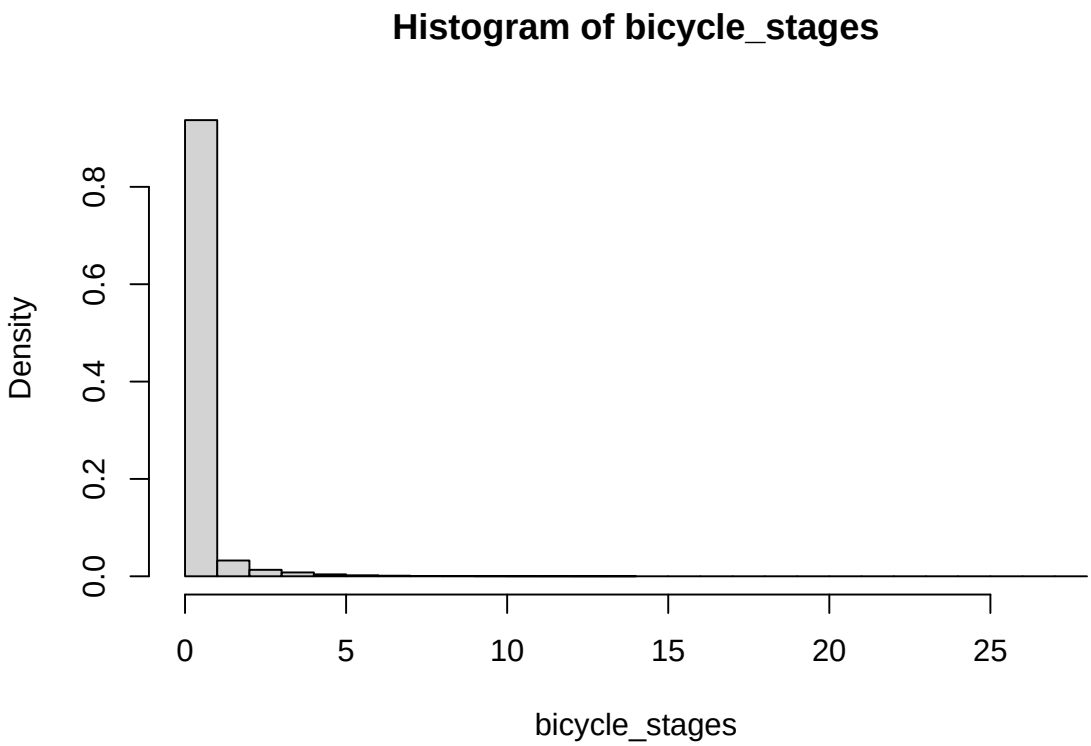
Total kilometers travelled

Format: Numeric.

`bicycle_stages`

Number of stages by bike

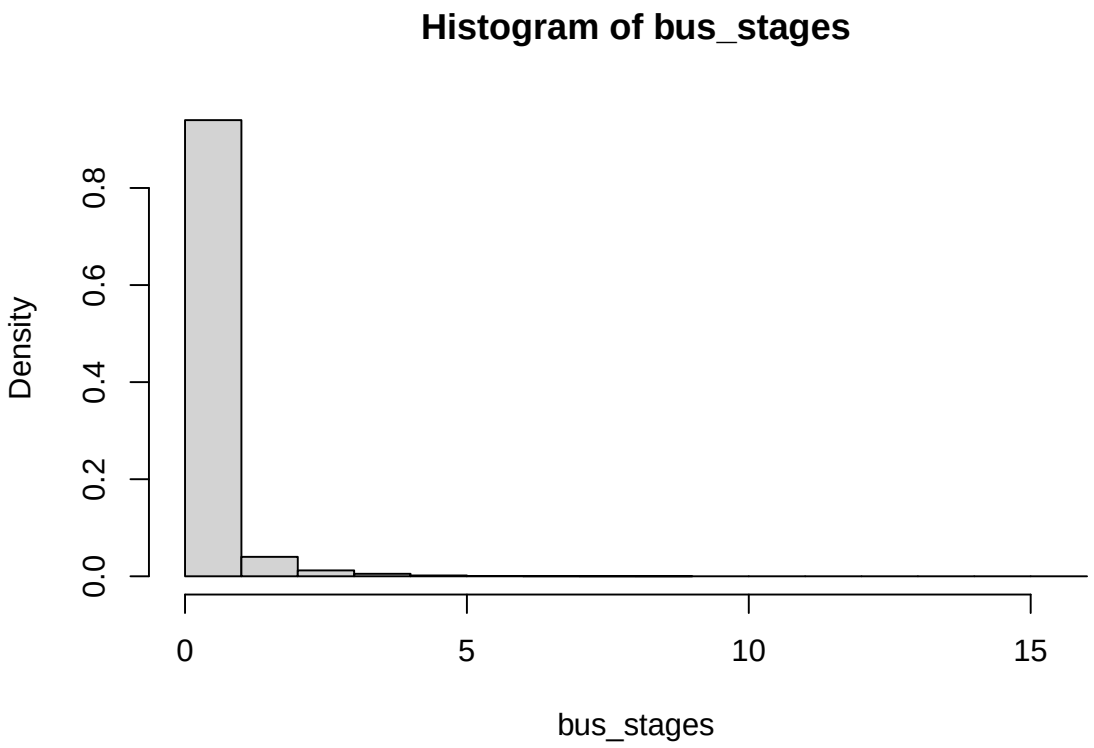
Format: Numeric.



`bus_stages`

Number of stages by bus

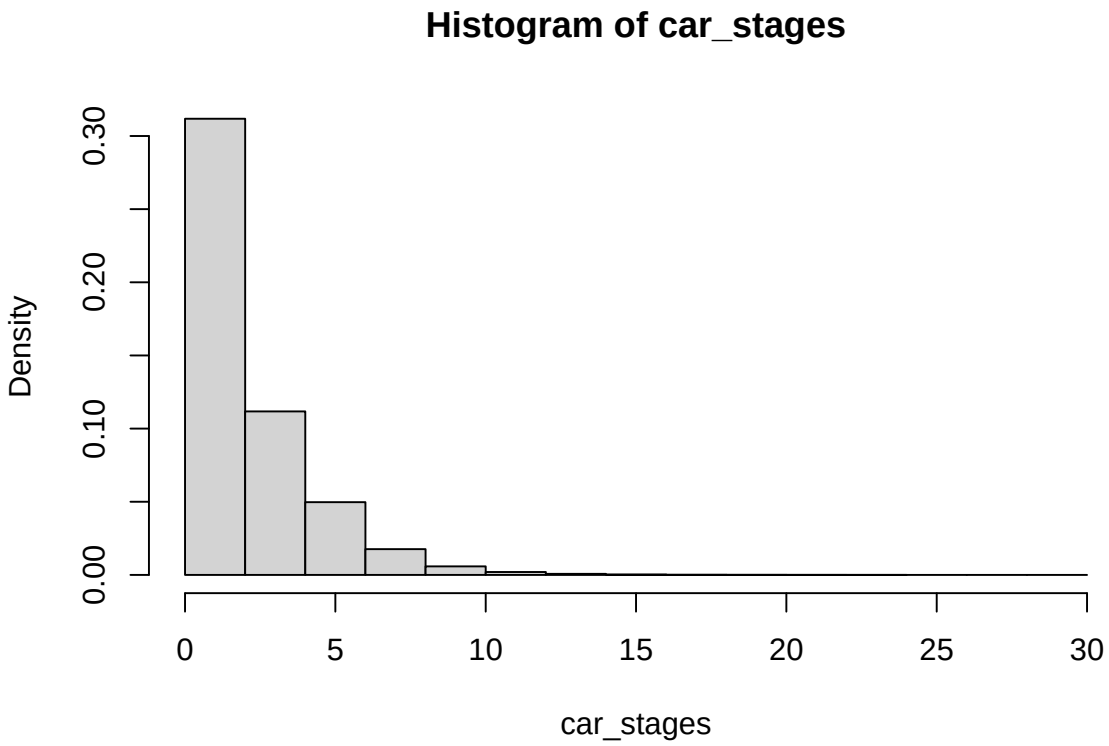
Format: Numeric.



`car_stages`

Number of stages by car

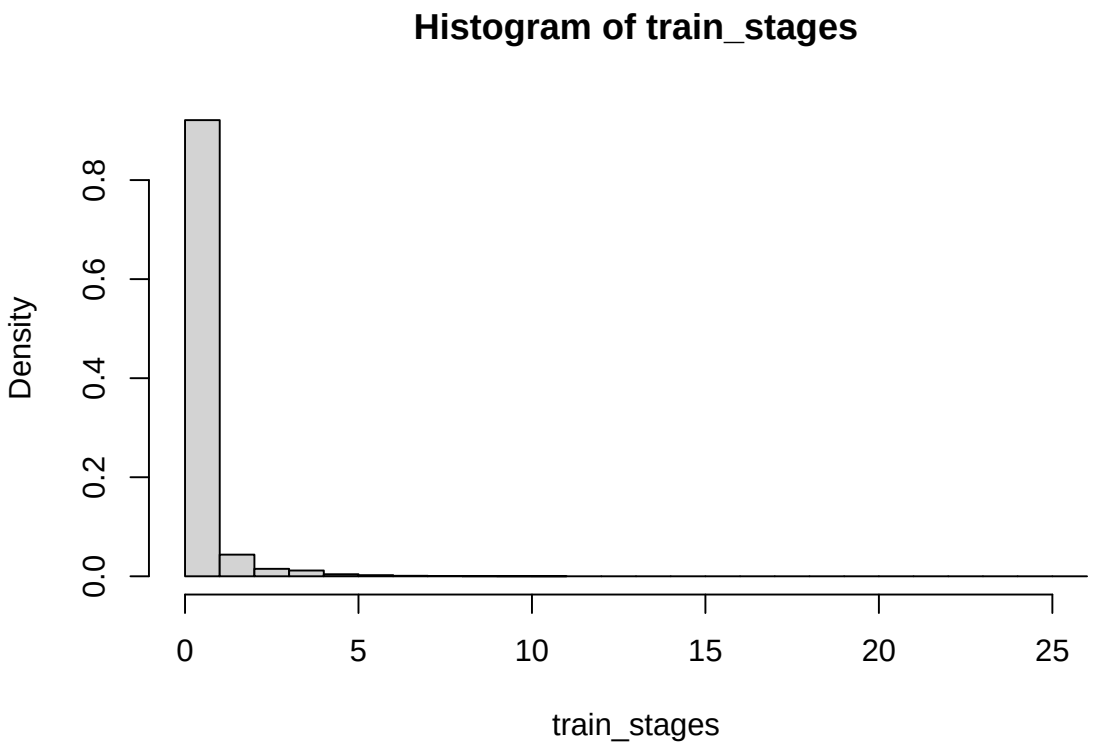
Format: Numeric.



`train_stages`

Number of stages by train

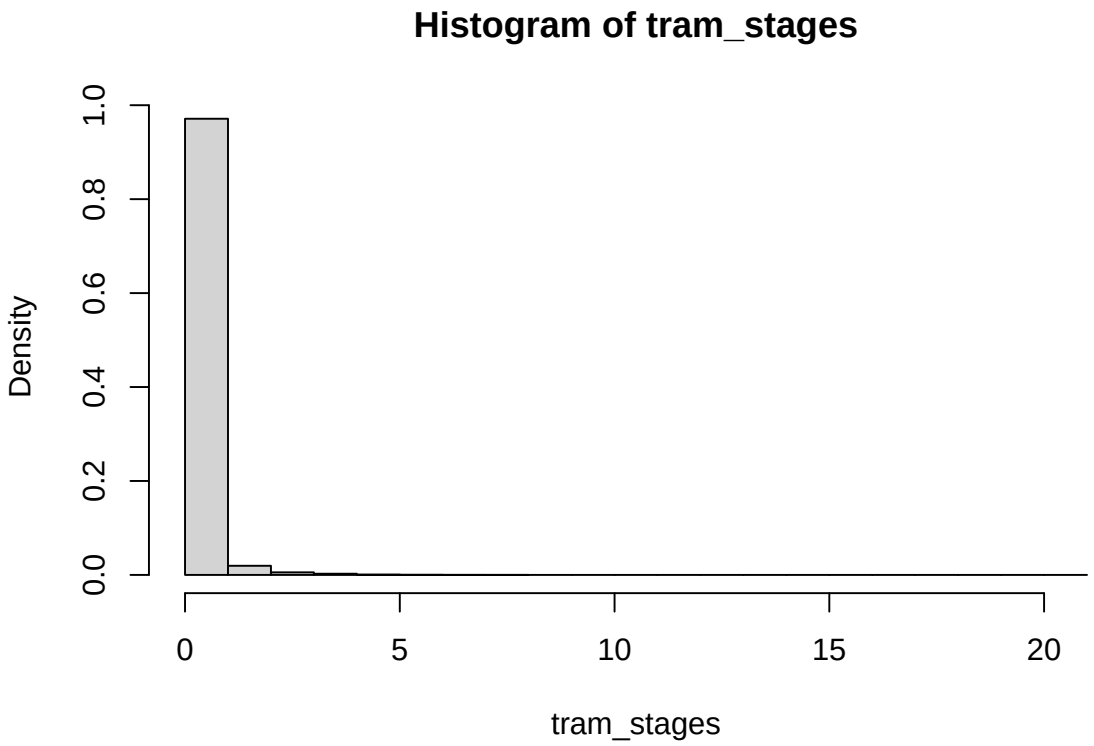
Format: Numeric.



`tram_stages`

Number of stages by tarm

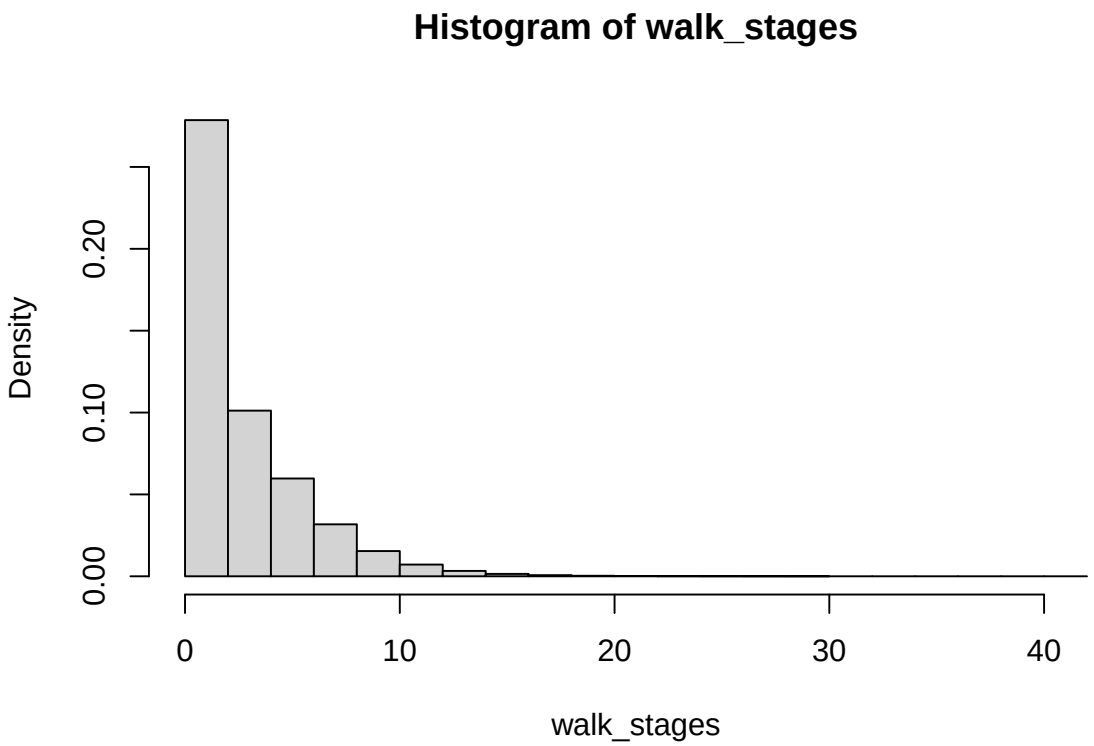
Format: Numeric.



`walk_stages`

Number of walk stages

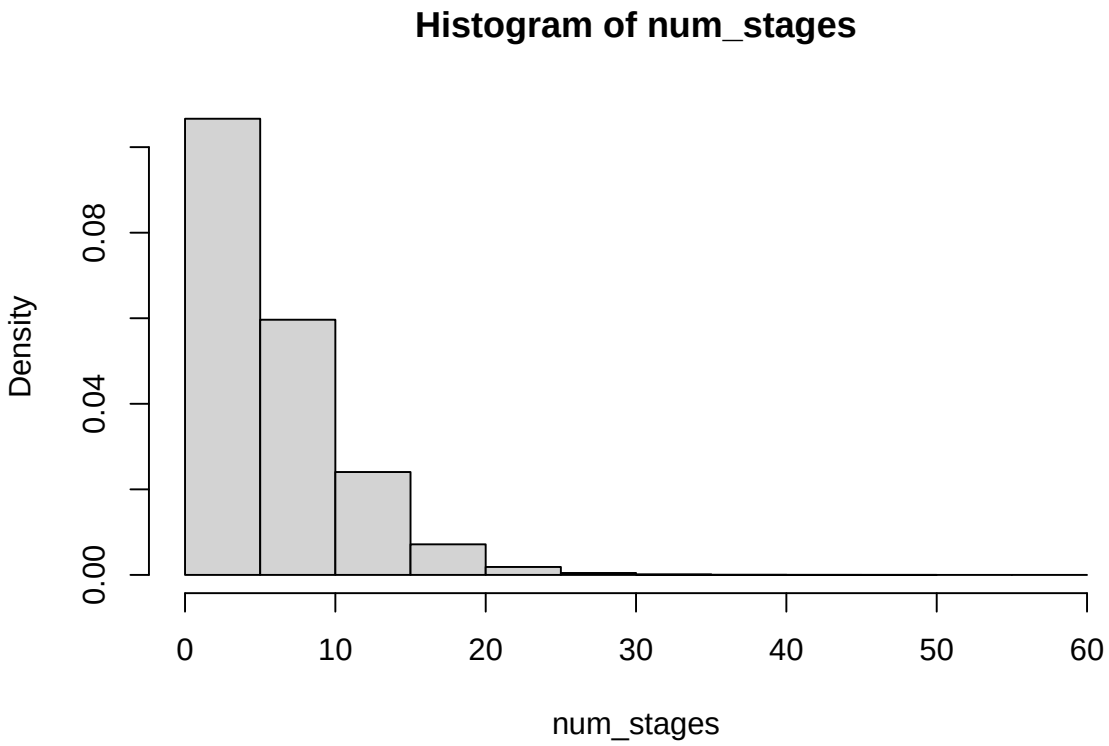
Format: Numeric.



`num_stages`

Total number of stages

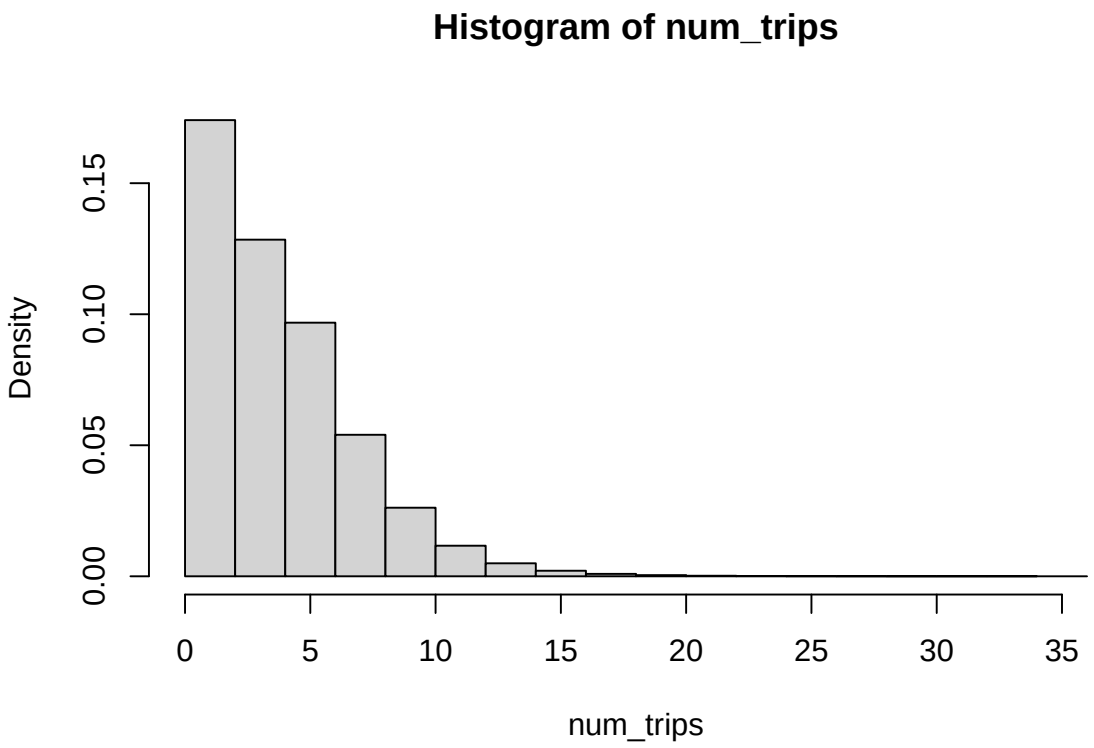
Format: Numeric.



`num_trips`

Number of trips (with stages between activities combined)

Format: Numeric.



`active`

Was the participant active on this day or not?

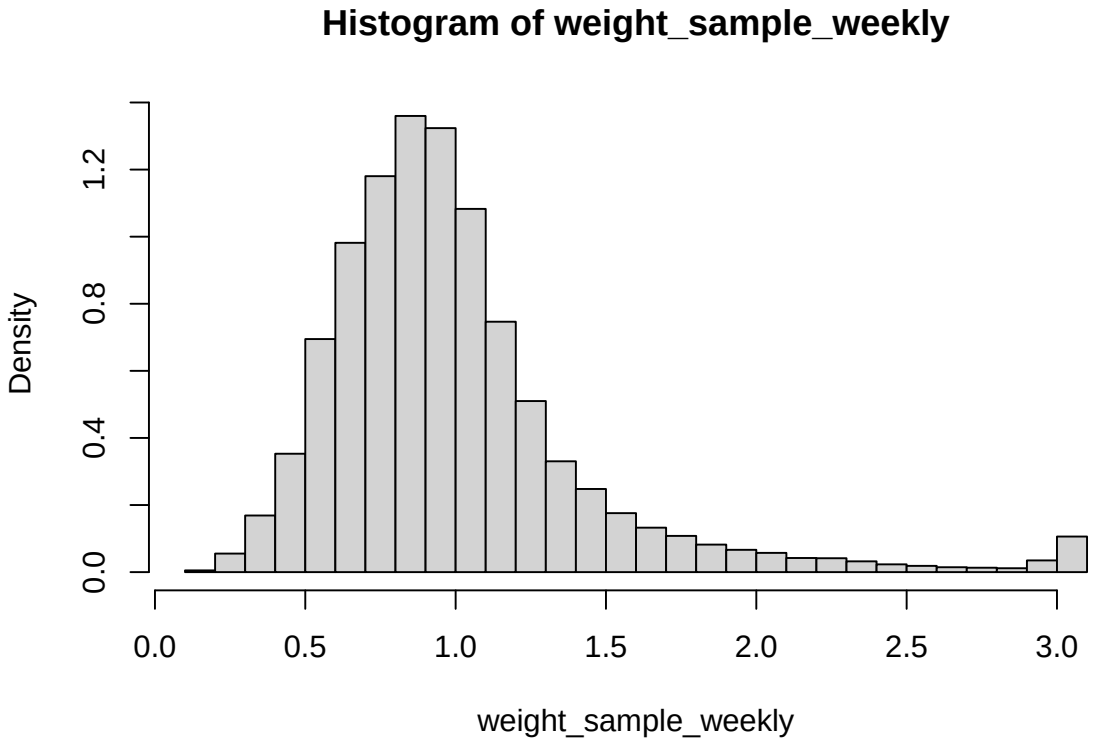
Format: Double.

Value	Count
~ Not active	92664
~ Active	557032

`weight_sample_weekly`

The weekly weight for the participant against the 22,000 mobis introductory survey participants

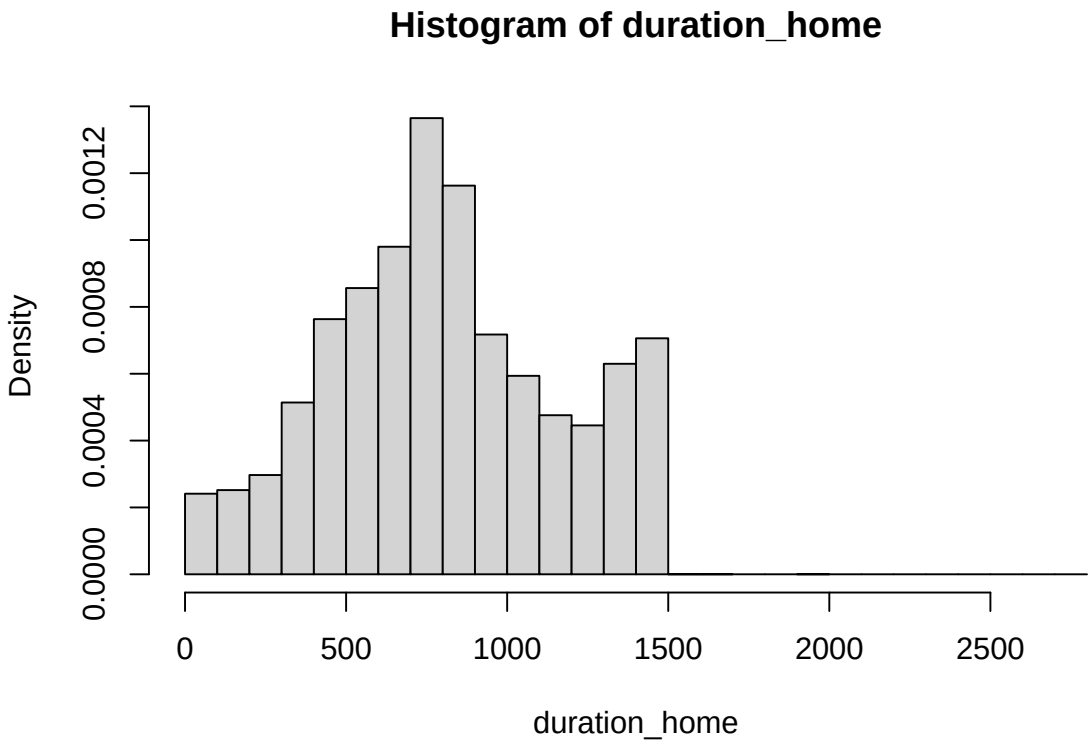
Format: Numeric.



`duration_home`

The duration spent at home (in minutes)

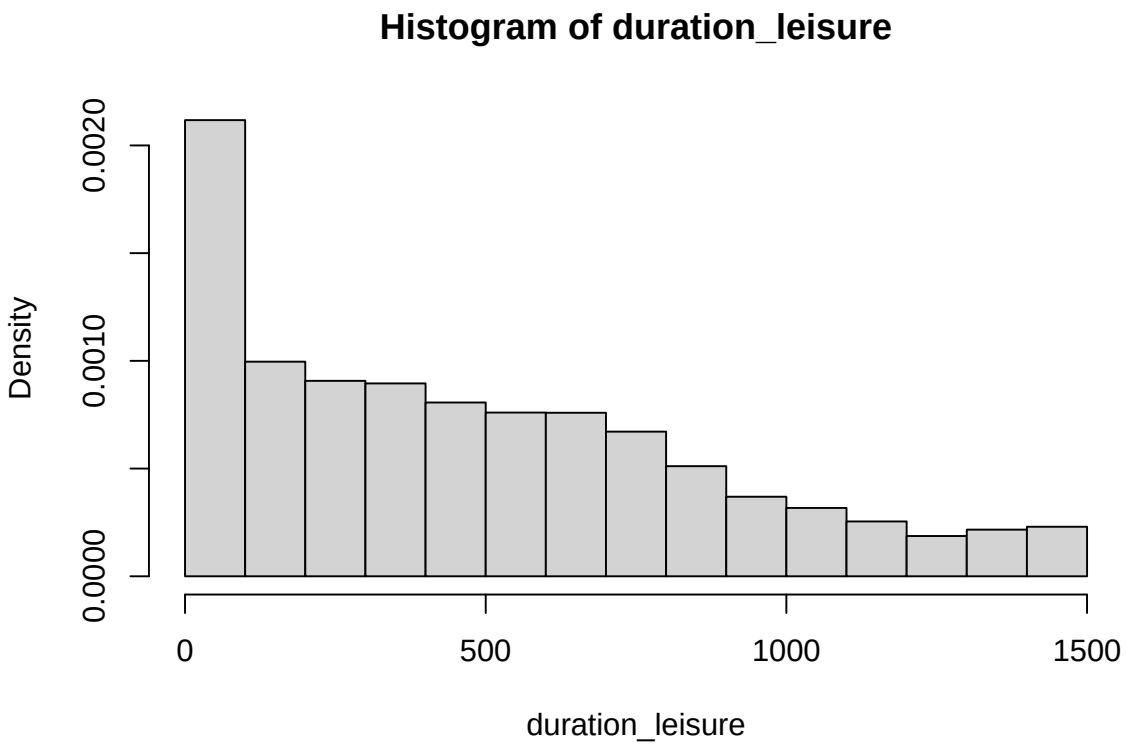
Format: Numeric.



`duration_leisure`

The duration spent on leisure activities (outside the home) (in minutes)

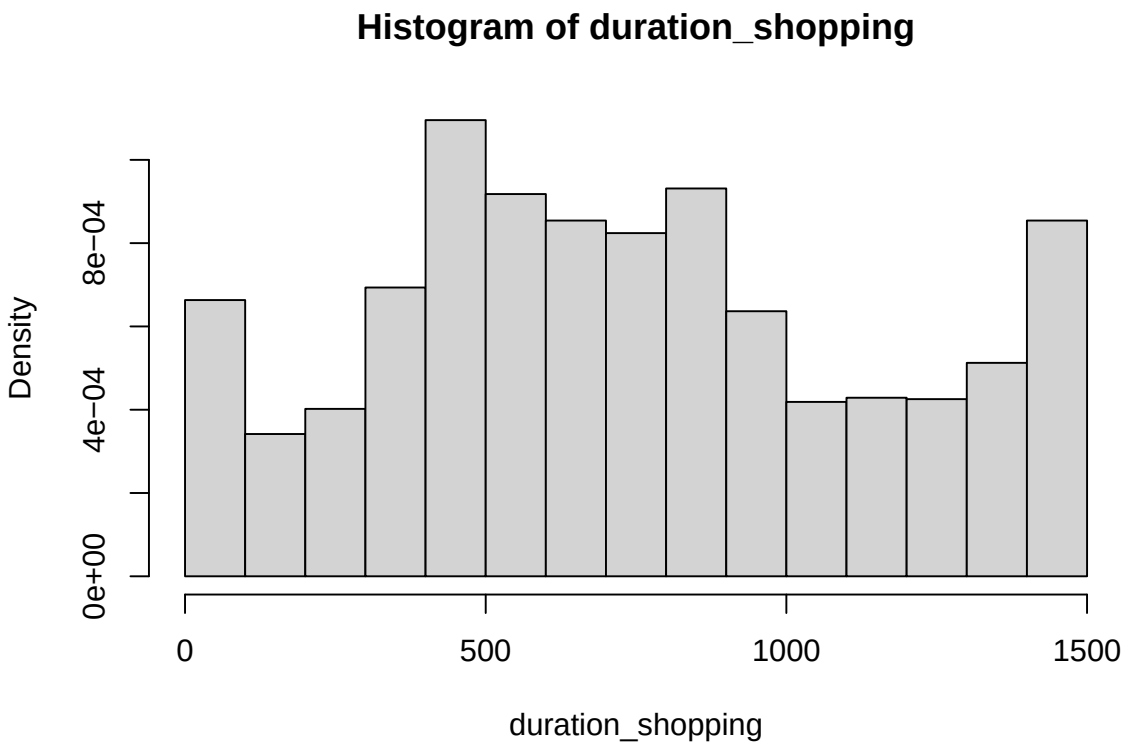
Format: Numeric.



`duration_shopping`

The duration spent shopping (in minutes)

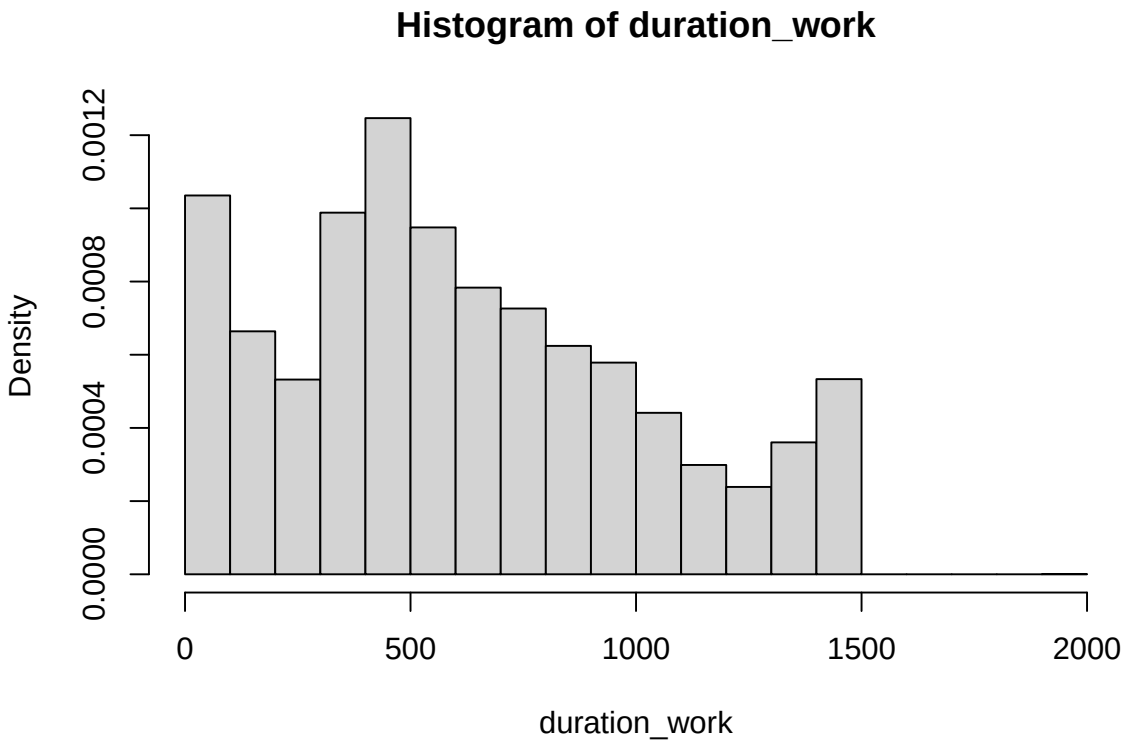
Format: Numeric.



`duration_work`

The duration spent at work (in minutes)

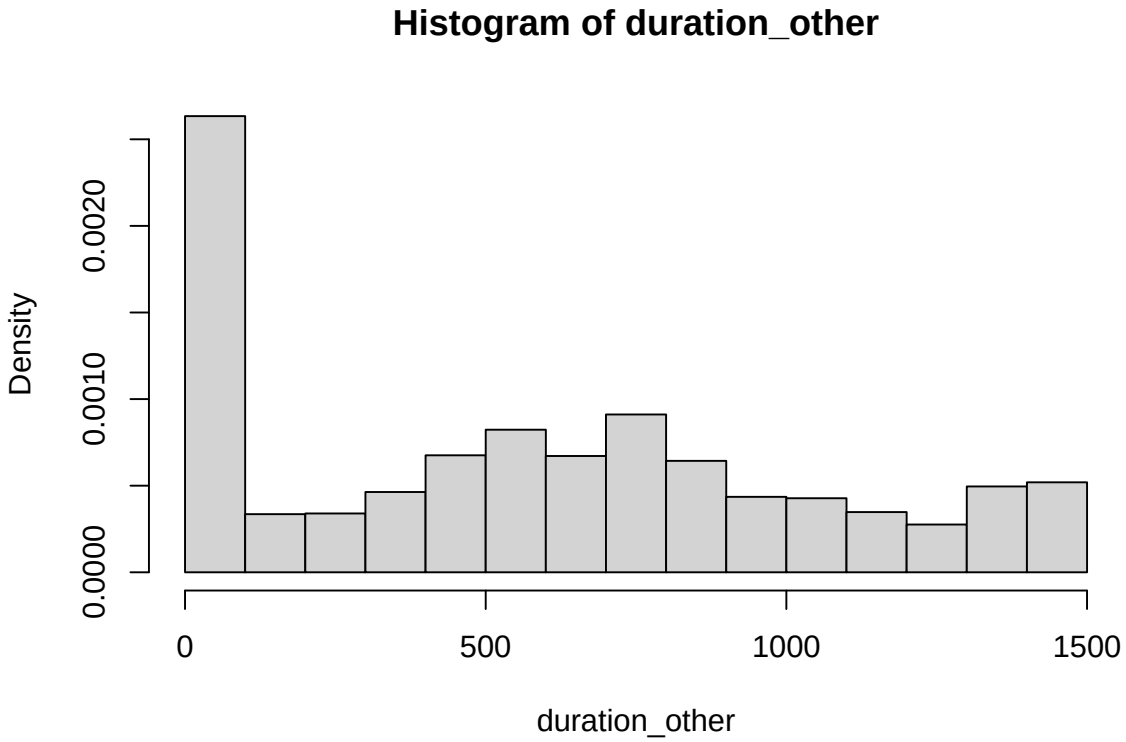
Format: Numeric.



`duration_other`

The duration spent on other activites (in minutes)

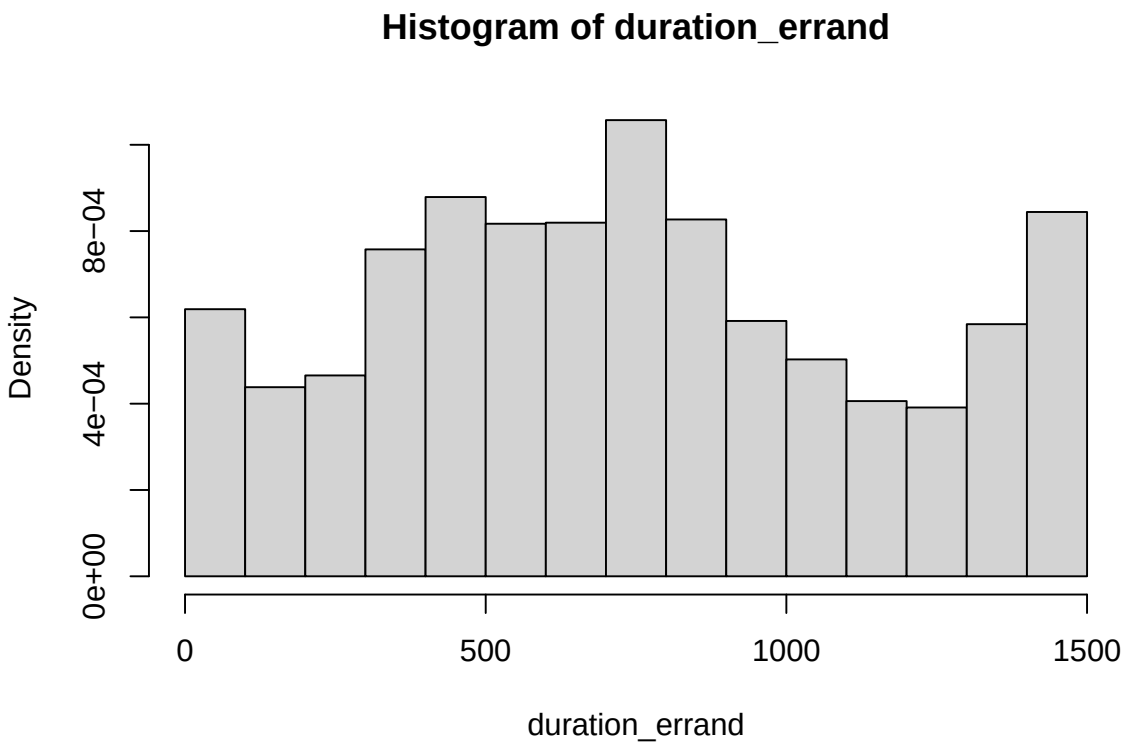
Format: Numeric.



`duration_errand`

The duration spent on errands (in minutes)

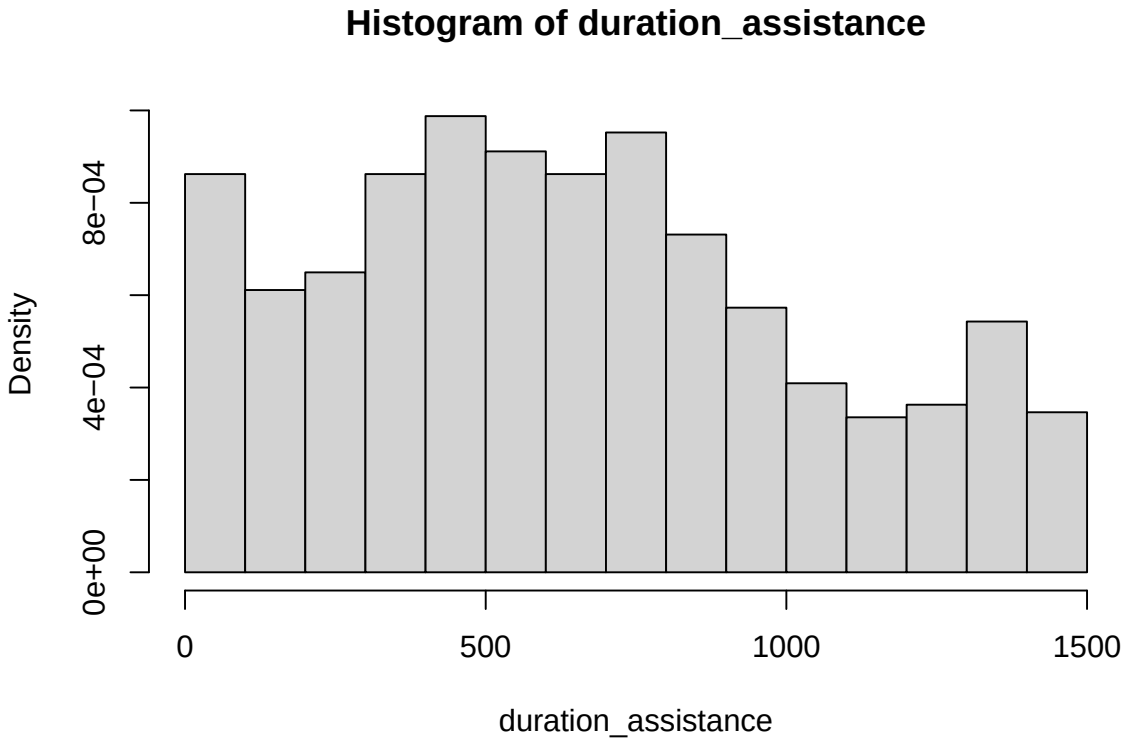
Format: Numeric.



`duration_assistance`

The duration spent assisting others (in minutes)

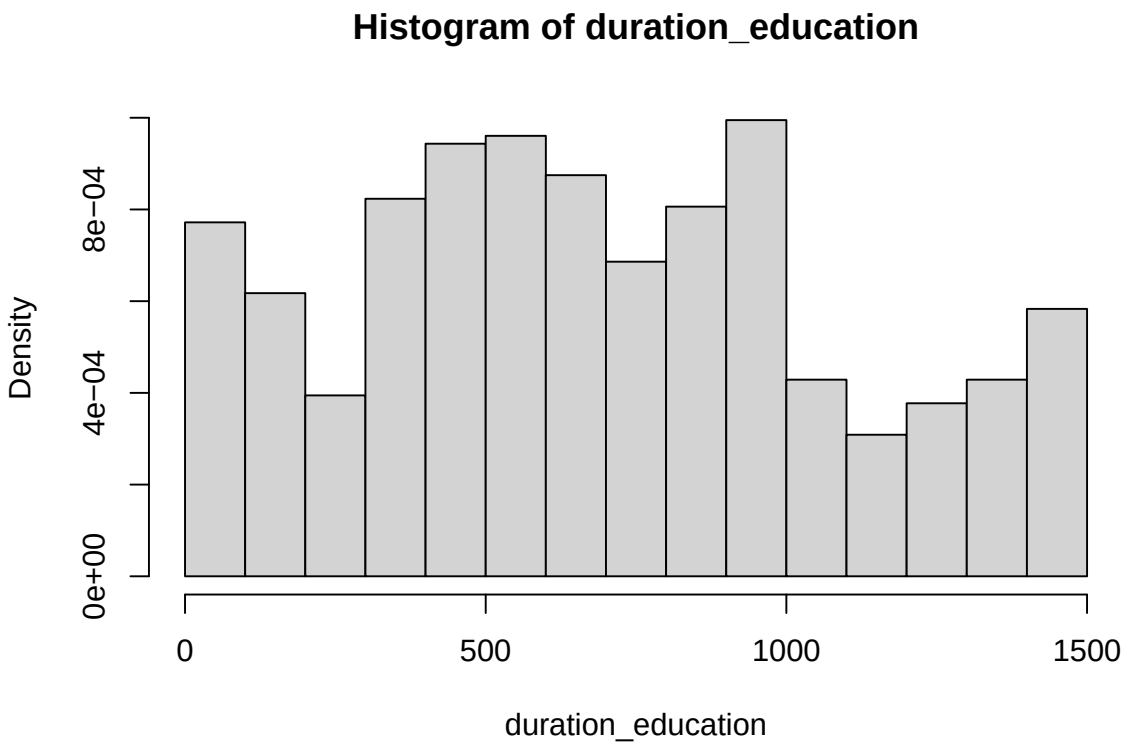
Format: Numeric.



`duration_education`

The duration spent on education activities (in minutes)

Format: Numeric.



`in_switzerland`

Whether the stage took place within Switzerland or not

Format: Double. Labels:

- 2 = ~ The participant did not leave switzerland
- 1 = ~ Some of the day was spend outside Switzerland
- 0 = ~ The whole day was spent outside Switzerland

Value	Count
~ The whole day was spent outside Switzerland	16451
~ Some of the day was spend outside Switzerland	24733
~ The participant did not leave switzerland	530020
NA's	78492

work_homeoffice: File description

Title: Combined home office surveys

Contents: The work/homeoffice relevant variables from all mobis and mobis-covid surveys, combined into one dataframe, so that the changes in homeoffice and working conditions can be analysed.

Data collection: Qualtrics

Unit of analysis: Participant-survey-response

File structure: DataFrame

File location: data_views/work_homeoffice.rda

Number of cases: 10926.

Variables per record: 31.

work_homeoffice: Variables

participant_id

Format: Character.

survey_date

The date the participant completed the survey.

Format: Date.

survey

The survey from which this record for the participant was taken.

Labels:

- mobis = The MOBIS introductory survey
- mobis-covid19 = The optional survey at the start of thier participation in MOBIS-COvid19
- mobis-final = The MOBIS final survey

Format: Character.

Value	Count
homeoffice_1	425
homeoffice_2	698
The MOBIS introductory survey	3690
The optional survey at the start of thier participation in MOBIS-COvid19	2418
The MOBIS final survey	3695

p_work_change

Format: Logical.

p_occup_1_employed

Normal employment

Format: Character.

Value	Count
employed	5752
NA's	5174

p_occup_1_intraining

Student/Trainee

Format: Character.

Value	Count
intraining	768
NA's	10158

p_occup_1_athome

At home - i.e. Housewife/stay-at-home-dad

Format: Character.

Value	Count
athome	291
NA's	10635

p_occup_1_lookingforwork

Looking for work

Format: Character.

Value	Count
lookingforwork	88
NA's	10838

p_occup_1_noteconactive

Not economically active

Format: Character.

Value	Count
noteconactive	89
NA's	10837

p_occup_1_retired

Retired

Format: Character.

Value	Count
retired	532
NA's	10394

p_occup_1_invalid

Unable to work due to disability

Format: Character.

Value	Count
invalid	40
Invalid (z.B. IV-Bezüger/in)	8
NA's	10878

p_occup_1_other

Other

Format: Character.

Value	Count
other	441
NA's	10485

p_occup_1_other_TEXT

Format: Character.

p_occup_employed

Whether the employment is self employed or not

Format: Character.

Value	Count
employed	5379
self-employed	342
NA's	5205

p_occup_fulltime

Fulltime, more than part-time, part-time

Labels:

- morethan_parttime = More than parttime
- parttime = Part-time
- fulltime = Full-time

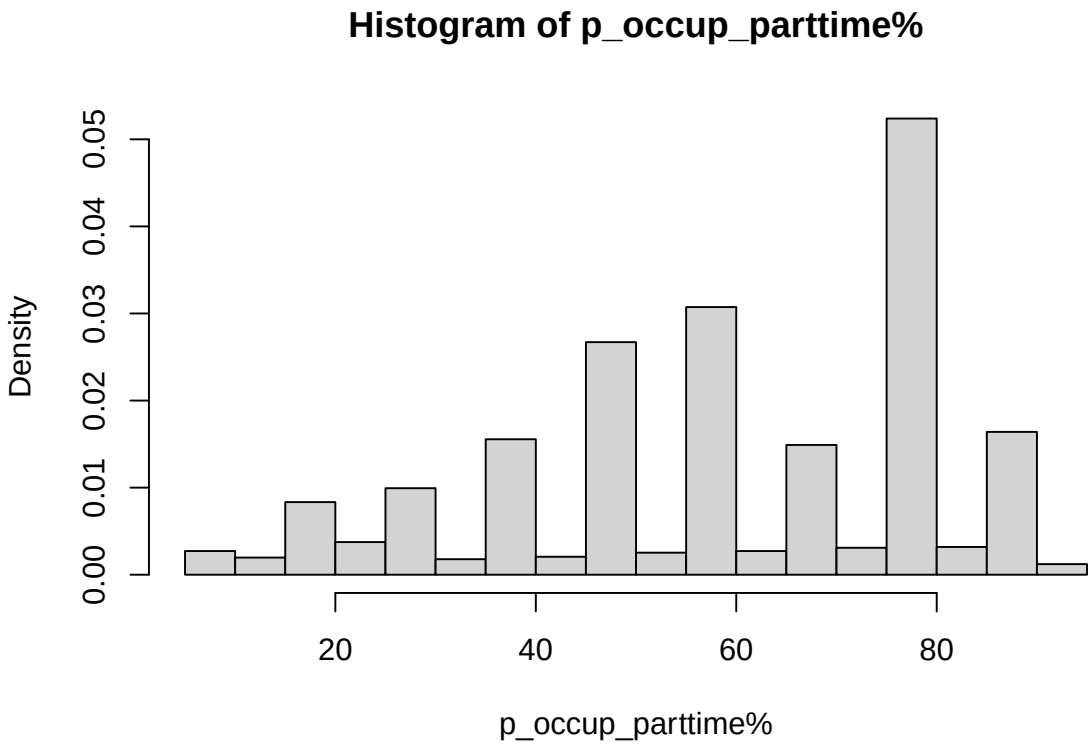
Format: Character.

	Full-time	More than parttime	Part-time	NA's
Count	3649	580	1554	5143

p_occup_parttime%

The percentage of a full-time load, if part-time

Format: Numeric.



p_work_flexibility

Format: Character.

Value	Count
No flexibility (fixed start and end time)	45
Some flexibility (flexible start and/or end time, but completing a set number of hours per day)	37
Full flexibility (flexible start and end time, completing a set number of hours per week, month or year)	27
NA's	10817

p_homeoffice_nocoron

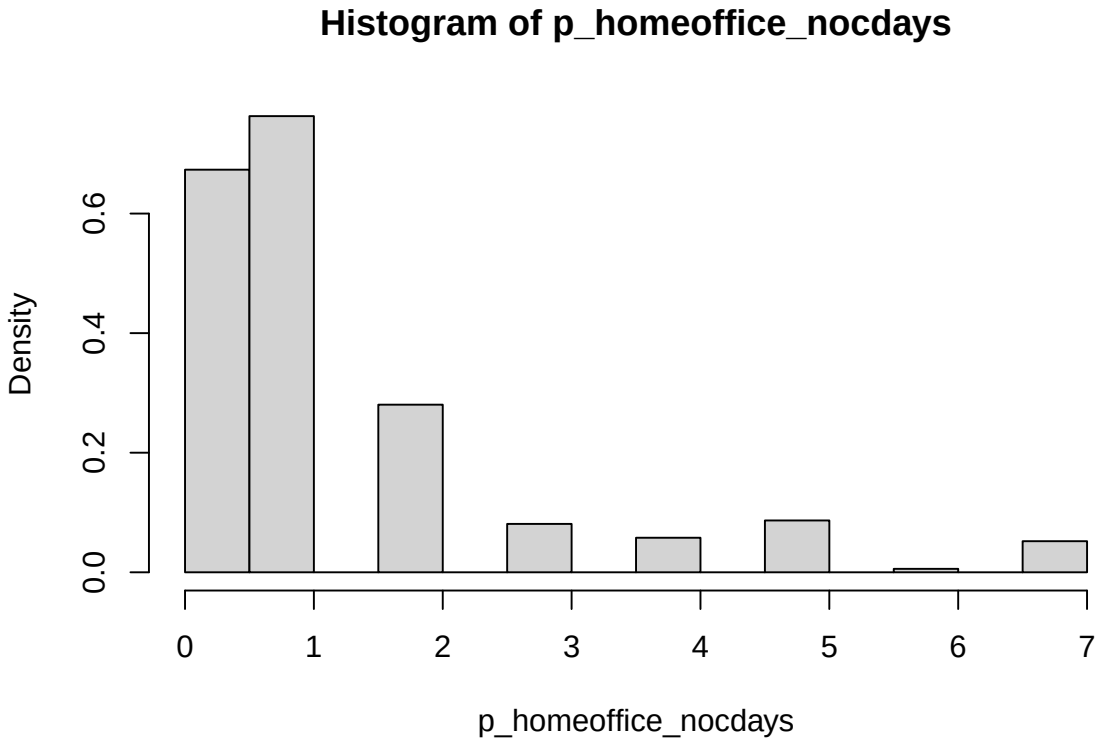
If home office was possible before the pandemic

Format: Logical.

`p_homeoffice_nocdays`

Number of days per week in home-office before the pandemic

Format: Numeric.



`p_homeoffice_coron`

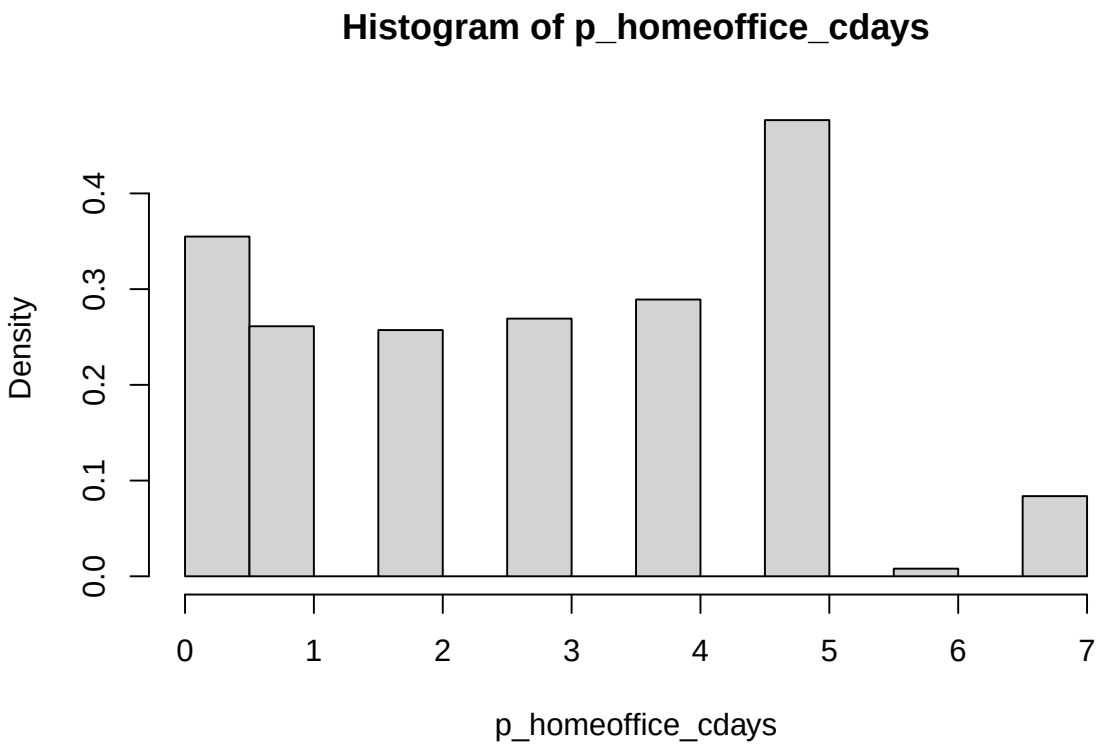
If home office was possible during the pandemic

Format: Logical.

`p_homeoffice_cdays`

Number of days per week in home-office during the pandemic

Format: Numeric.



`p_occup_kurzarbeit`

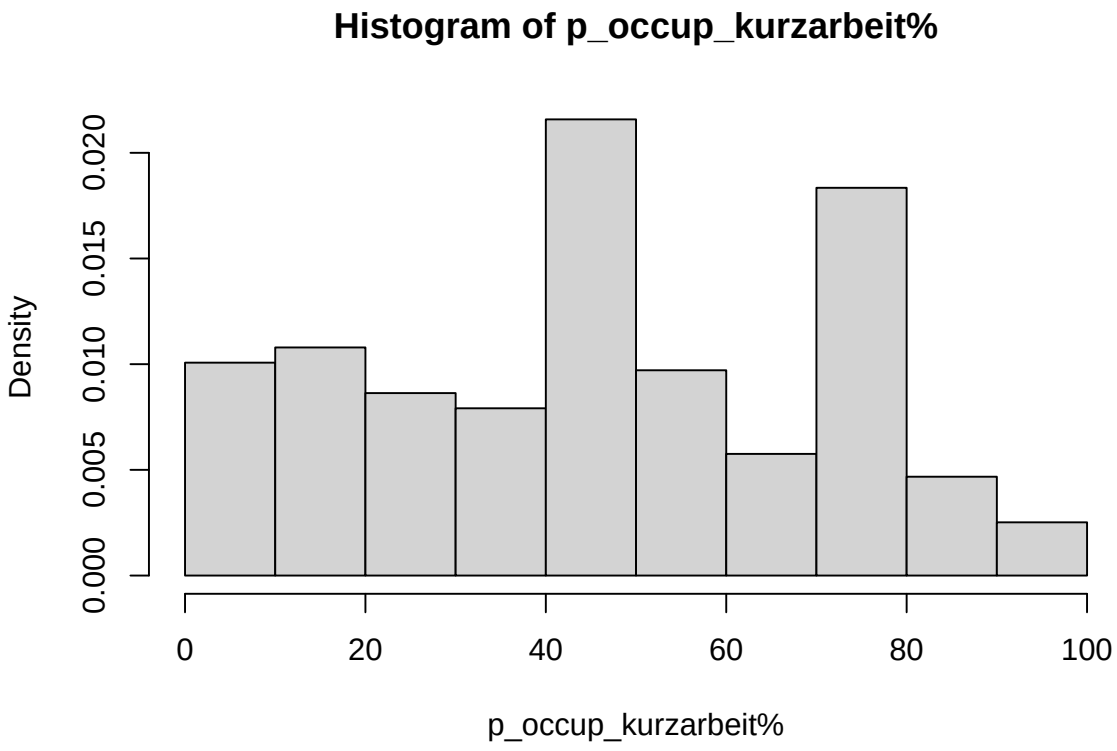
Whether the participant was under kurzarbeit conditions at the time of the survey

Format: Logical.

p_occup_kurzarbeit%

The adjusted work percentage under kurzarbeit (percentage of a full-time load)

Format: Numeric.



p_occup_forcedleave

Whether the participant has been required to take forced-leave due to the pandemic

Format: Logical.

p_occup_regular

Is the participant's job consist of regular hours

Format: Logical.

p_occup_shift

Does the job involve shift work?

Format: Logical.

p_occup_educ

If the participant is in training, what is the form of training: professional_training; pupil; student

Format: Character.

Value	Count
a student	12
In Berufsausbildung	7
in professional training	2
professional_training	40
pupil	7
student	208
Student/in	32
NA's	10618

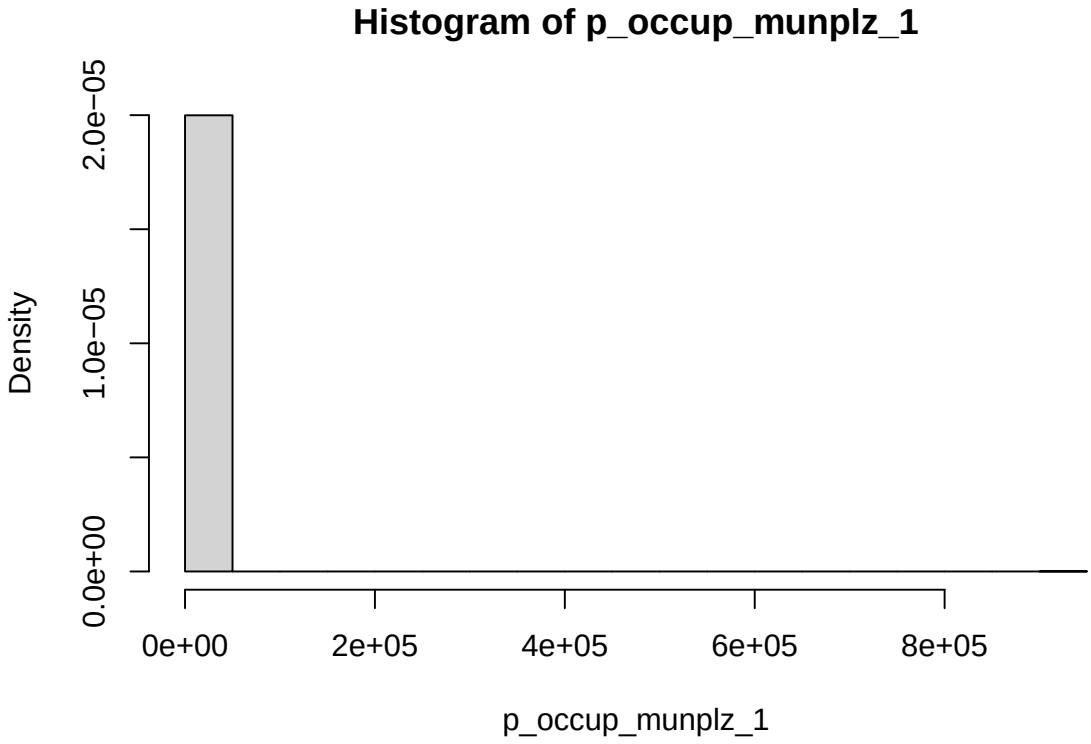
p_occup_location

Does the participant have a regular place of work (i.e. a fixed address)

Format: Logical.

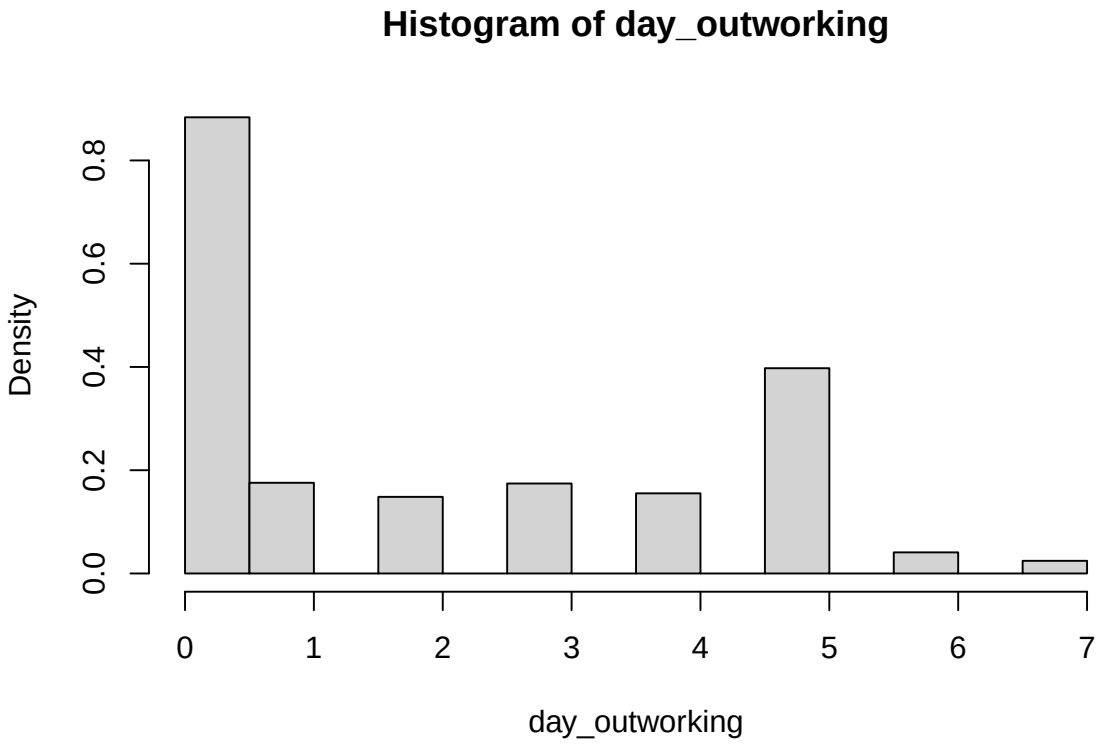
p_occup_munplz_1

Format: Numeric.



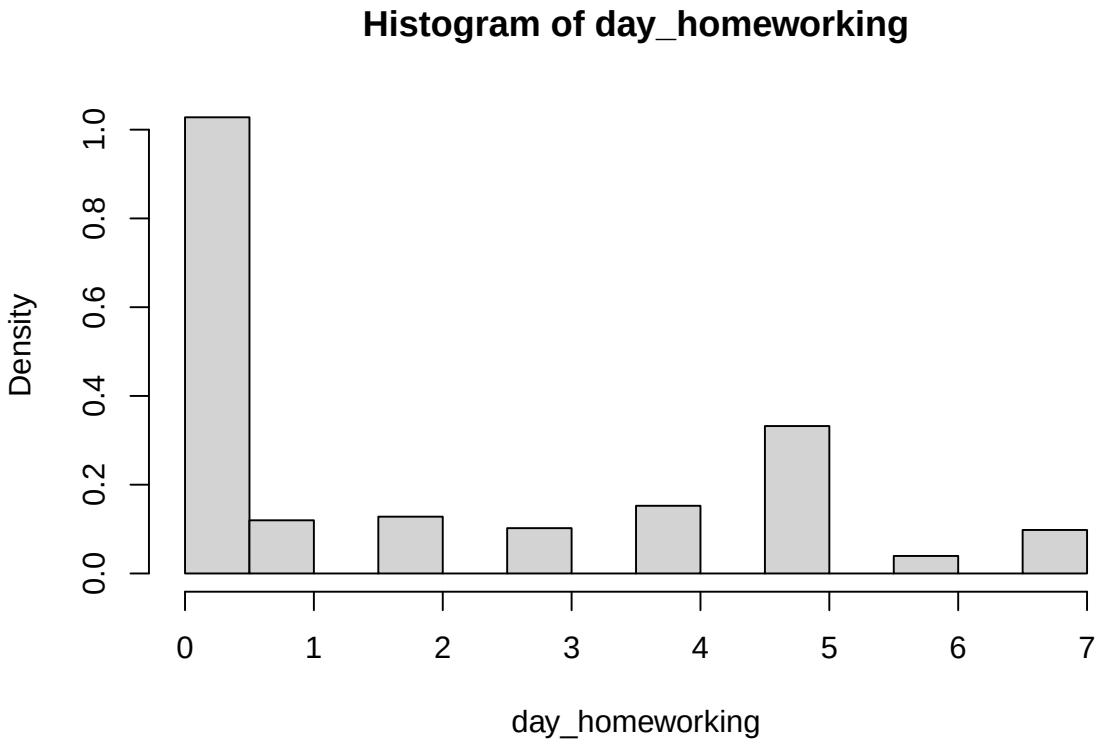
`day_outworking`

Format: Numeric.



day_homeworking

Format: Numeric.



active_days: File description

Title: Active days data view

Contents: A summary of which days participants were active in the Catch-my-Day app

Data collection: Catch-my-Day App / Motiontag

Unit of analysis: Participant-days

File structure: DataFrame

File location: data_views/active_days.rda

Number of cases: 650697.

Variables per record: 3.

active_days: Variables

participant_id

Format: Character.

day

Format: Date.

active

Format: Numeric.

	0	1
Count	50435	600262

imputed_activity_purpose: File description

Title: Imputed activity purposes

Contents: The labelled and imputed purpose for each activity. For more information see the activities files, which now includes both labelled and imputed purposes. This file is now redundant, but kept for historical purposes.

Data collection: Catch-my-Day App / Motiontag

Unit of analysis: Activity

File structure: DataFrame

File location: enrichments/imputed_activity_purpose.rda

Number of cases: 2681642.

Variables per record: 3.

imputed_activity_purpose: Variables

`activity_id`

Format: Character.

`labels`

Format: Factor.

`imputed_purpose`

Format: Factor.