Package: misocialr (via r-universe)

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Title Access the Brazilian 'MDS' Social Information Matrix ('MI Social') API from 'R'

Version 0.4.0

Description 'Tidyverse'-friendly interface to the 'MI Social' API of the Brazilian Ministry of Development and Social Assistance ('MDS', 'SAGI') <https://aplicacoes.mds.gov.br/sagi/servicos/misocial>. Retrieves monthly municipal series of the 'Cadastro Unico' (registered families and people by income bracket), the 'Bolsa Familia' programme (beneficiary families, benefits and transfers), the 'BPC' benefit, the social assistance network ('CRAS', 'CREAS' and other units), 'SUAS' funding, 'Bolsa Familia' conditionality monitoring and food security programmes as tidy long-format 'tibbles'.

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Author André Leite [aut, cre] (ORCID: <https://orcid.org/0000-0002-4718-9766>), Marcos Wasiliew [aut] (ORCID: <https://orcid.org/0009-0004-4694-3159>), Hugo

Vasconcelos [aut] (ORCID:
<https://orcid.org/0000-0001-6249-0920>), Carlos Amorim [aut]
(ORCID: <https://orcid.org/0000-0001-6315-8305>), Diogo Bezerra
[aut] (ORCID: <https://orcid.org/0000-0002-1216-8674>)

Maintainer André Leite <leite@castlab.org>

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`ibge_code7` *Convert 6-digit MDS municipality codes to 7-digit IBGE codes*

Description

The MI Social API identifies municipalities by the first six digits of the IBGE code (without the check digit). This helper restores the official 7-digit code, using the IBGE check-digit rule plus the table of municipalities that are exceptions to it.

Usage

```
ibge_code7(x)
```

Arguments

x	Character or numeric vector of 6-digit codes.

Value

A character vector of 7-digit IBGE codes (NA for inputs that are not 6 digits).

Examples

```
ibge_code7(c(261160, "260790"))
```

---

mds_api_fields *List the fields published for one municipality*

Description

Fetches the full documents of one municipality over all months (paging through the whole history) and returns the union of the field names found, with the first and last period in which each field appears. MI Social documents are sparse (a field only exists in the months it was published), which is why the whole history is scanned rather than a single document.

Usage

```
mds_api_fields(locality = 261160, refresh = FALSE)
```

Arguments

locality	6- or 7-digit IBGE code of the municipality whose history is scanned. Defaults to Recife (261160).
refresh	Logical. Ignore the cached result and ask the API again? Default FALSE.

Details

This is the catalogue of **one** municipality, not of the whole API: fields that exist only elsewhere (a regional CREAS, for instance) do not appear. Scan other municipalities to widen the search.

Results are cached for the session.

Value

A tibble with columns field, unit (inferred from the suffix; "unknown" when the suffix does not say), storage_type, in_dictionary, first_period and last_period. Empty, with a warning, when the API has no document for the municipality.

Examples

```
mds_api_fields()
```

mds_bolsa_familia *Bolsa Familia programme: beneficiary families, benefits and transfers*

Description

Shortcut for `mds_data()` with the curated Bolsa Familia fields (`mds_fields("bolsa_familia")`).

Usage

```
mds_bolsa_familia(periods = NULL, localities = "BR", fields = NULL)
```

Arguments

`periods`	Periods to fetch: • `NULL` (default): the last 12 months up to the current month; • a negative number `-n`: the last `n` months up to the current month; • years (`2024`) and/or months as `YYYYMM` (`202401`, `"202401"`).
`localities`	`"BR"` (all of Brazil), state abbreviations (`"PE"`) or 2-digit state codes (`26`), and/or 6- or 7-digit IBGE municipality codes (`2611606`), in any combination. Default `"BR"`.
`fields`	Fields to fetch. `NULL` (default) fetches every curated field of the theme.

Value

A tibble in the format of `mds_data()`.

Examples

```
mds_bolsa_familia(periods = -6, localities = 2611606)
```

mds_bpc_suas *BPC and social assistance network (CRAS, CREAS)*

Description

Shortcut for `mds_data()` with the curated BPC and CadSUAS fields (`mds_fields("bpc_suas")`).

Usage

```
mds_bpc_suas(periods = NULL, localities = "BR", fields = NULL)
```

Arguments

`periods`	Periods to fetch: • `NULL` (default): the last 12 months up to the current month; • a negative number `-n`: the last `n` months up to the current month; • years (`2024`) and/or months as `YYYYMM` (`202401`, `"202401"`).
`localities`	`"BR"` (all of Brazil), state abbreviations (`"PE"`) or 2-digit state codes (`26`), and/or 6- or 7-digit IBGE municipality codes (`2611606`), in any combination. Default `"BR"`.
`fields`	Fields to fetch. `NULL` (default) fetches every curated field of the theme.

Value

A tibble in the format of `mds_data()`.

Examples

```
mds_bpc_suas(periods = 2025, localities = "PE")
```

`mds_cadunico` *Cadastro Unico: registered families and people, by income bracket*

Description

Shortcut for `mds_data()` with the curated Cadastro Unico fields (`mds_fields("cadunico")`).

Usage

```
mds_cadunico(periods = NULL, localities = "BR", fields = NULL)
```

Arguments

`periods`	Periods to fetch: • `NULL` (default): the last 12 months up to the current month; • a negative number `-n`: the last `n` months up to the current month; • years (`2024`) and/or months as `YYYYMM` (`202401`, `"202401"`).
`localities`	`"BR"` (all of Brazil), state abbreviations (`"PE"`) or 2-digit state codes (`26`), and/or 6- or 7-digit IBGE municipality codes (`2611606`), in any combination. Default `"BR"`.
`fields`	Fields to fetch. `NULL` (default) fetches every curated field of the theme.

Value

A tibble in the format of `mds_data()`.

Examples

```
mds_cadunico(periods = 2025, localities = "PE")
```

`mds_clear_cache` *Clear the session cache*

Description

Removes all cached localities, field lists, periods and field checks, forcing fresh API calls on subsequent requests. To refresh a single result, use the `refresh` argument of `mds_periods()`, `mds_localities()` or `mds_api_fields()`.

Usage

```
mds_clear_cache()
```

Value

No return value, called for side effects.

Examples

```
mds_clear_cache()
```

`mds_data` *Fetch MI Social data*

Description

Main retrieval function. Returns monthly municipal values of the requested fields as a tidy long tibble: one row per field x municipality x month in which the API has a value.

Usage

```
mds_data(fields, periods = NULL, localities = "BR", validate = TRUE)
```

Arguments

`fields`	Character vector of field names. See `mds_fields()` for the curated list and `mds_api_fields()` for everything the API has.
`periods`	Periods to fetch: • `NULL` (default): the last 12 months up to the current month; • a negative number `-n`: the last `n` months up to the current month; • years (`2024`) and/or months as `YYYYMM` (`202401`, `"202401"`).
`localities`	`"BR"` (all of Brazil), state abbreviations (`"PE"`) or 2-digit state codes (`26`), and/or 6- or 7-digit IBGE municipality codes (`2611606`), in any combination. Default `"BR"`.
`validate`	Logical. Check that fields not in the dictionary exist in the API before requesting data? Default `TRUE`. Local checks (names, periods, localities) always run.

Details

The query is validated before any data request (field names, period format, locality codes), then paged through Solr and, when many municipality codes are given, split into several requests whose results are bound together.

Values are returned as published. Note that the API answers `0` for months that were not published yet; use `mds_drop_unpublished()` to remove those trailing zeros explicitly.

Only numeric fields are supported: a field whose values are text (such as `regiao`) is an error rather than an empty result.

Every response is checked before it is used: a partial or malformed answer, a total that changes while paging, a document read twice, a document without municipality or month, a field with several values in one document, or two different values for the same municipality, month and field are errors (classes `misocialr_error_response` and `misocialr_error_conflict`). A requested municipality that returns no document raises a warning.

Options: `misocialr.timeout` (seconds per request, default 180) and `misocialr.quiet` (`TRUE` hides the progress messages).

Value

A tibble with columns `locality_id` (6-digit code used by the API), `ibge_code` (7-digit IBGE code), `locality_name`, `state`, `period` (`"YYYYMM"`), `field`, `label`, `unit` and `value` (double). The time of the request is kept in `attr(x, "retrieved_at")`.

Examples

```
mds_data(
  c("bpc_ben_i", "cadsuas_qtd_cras_i"),
  periods = 2025,
  localities = c(2611606, 2607901)
)
```

`mds_drop_unpublished` *Drop (or flag) months that were not published yet*

Description

The MI Social API answers `0`, not "missing", for months whose data has not been published: the BPC series, for example, carries zeros for every municipality up to December of the current year. Treating those zeros as real would make the latest months look like a collapse of the programme.

Usage

```
mds_drop_unpublished(
  data,
  today = Sys.Date(),
  reference = c("selection", "brazil"),
  action = c("drop", "flag")
)
```

Arguments

`data`	A tibble returned by `mds_data()` or a theme shortcut.
`today`	Reference date for rule 1. Default `Sys.Date()`.
`reference`	Where the last published month is read from: `"selection"` or `"brazil"`. See Details.
`action`	`"drop"` (default) removes future and unpublished rows; `"flag"` keeps every row and adds the columns `publication_status` (`"published"`, `"future"`, `"unpublished"` or `"missing"`), `publication_reason` and `publication_reference`.

Details

This helper applies an explicit rule, per field:

1. months after the current month are **future**;
2. months after the last month with a non-zero value are **unpublished**;
3. a field with no non-zero value at all is unpublished entirely.

The "last month with a non-zero value" comes from `reference`:

- `"selection"` (default): the localities in `data`. Needs no request, but a small selection can legitimately end in zeros (a municipality without a CREAS unit, for example), and those zeros would be dropped.
- `"brazil"`: every municipality in the country, through `mds_periods()` (two facet requests per field when not cached). A month is unpublished only when no municipality in Brazil has a non-zero value, which keeps legitimate zeros of small selections.

A non-zero value in `data` is never classified as unpublished. If the national reference says a month with such a value is unpublished (a cached reference older than the data, for instance), the reference is requested again; if the contradiction remains, the month is kept and a warning is raised.

This is an inference from the published values, not an official publication date. A series can legitimately end in zeros, even nationally; use `action = "flag"` to inspect the classification before removing anything.

Rows with a missing `value` are never classified as zero: they are kept and flagged as `"missing"`.

Value

`data` without the dropped rows, or with the classification columns. A message summarizes what was removed.

Examples

```
x <- tibble::tibble(
  locality_id = "261160", period = c("202506", "202507", "202508"),
  field = "bpc_ben_i", value = c(98000, 98500, 0)
)
mds_drop_unpublished(x, today = as.Date("2025-12-01"))
mds_drop_unpublished(x, today = as.Date("2025-12-01"), action = "flag")
```

---

mds_fields *List curated fields*

Description

Returns the curated dictionary of MI Social fields: the technical field name used by the API, a readable Portuguese label, the unit and how the value is stored in the API.

Usage

```
mds_fields(theme = NULL)
```

Arguments

`theme`	Optional theme id (see `mds_themes()`). `NULL` (default) returns all themes.

Details

The API itself has no data dictionary. Labels are a reading of the technical names, checked against the published values; units are what is counted (`Famílias`, `Pessoas`, `R$`, `%`...). `storage_type` is the Solr type given by the suffix (`_i` integer, `_l` long, `_f` float, `_d` double, `_s` string) and says nothing about the unit. Any other field published by the API (see `mds_api_fields()`) can still be requested by name in `mds_data()`.

`nature` says how a field may be aggregated:

nature	Across municipalities	Across months
estoque (count at the month)	sum	do not sum
fluxo (amount in the month)	sum	sum
fluxo anual (one value a year, in December)	sum	one value a year
acumulado (running total)	sum	do not sum
taxa, média, índice	do not sum	do not sum

nature_basis says where the classification comes from: medido (the monthly series was inspected: a running total only grows, an amount of the month varies and restarts), mesmo grupo de um campo medido, or rótulo e unidade (inferred from the label and unit, not inspected).

Value

A tibble with columns theme, field, label, unit, nature, nature_basis and storage_type.

Examples

```
mds_fields("bpc_suas")
```

---

mds_localities *List municipalities available in the API*

Description

Returns the municipalities as identified by the MI Social API, with the 6-digit code the API uses and the official 7-digit IBGE code. The list is read from one month (by default December of the last closed year), paged and checked for completeness; it is cached for the session.

Usage

```
mds_localities(state = NULL, period = NULL, refresh = FALSE)
```

Arguments

state	Optional state abbreviations (e.g. "PE") or 2-digit IBGE state codes (e.g. 26). NULL (default) returns all of Brazil.
period	Month (YYYYMM) the list is read from. NULL (default) uses December of the last closed year. The territorial division of that month is what is returned.
refresh	Logical. Ignore the cached list and ask the API again? Default FALSE.

Value

A tibble with columns locality_id (6 digits, as in the API), ibge_code (7 digits), locality_name, state and region. The month and time of the request are kept in attr(x, "period") and attr(x, "retrieved_at").

Examples

```
mds_localities("PE")
```

`mds_pbf_condicionalidades` *Bolsa Familia conditionalities: education and health follow-up*

Description

Shortcut for `mds_data()` with the curated conditionality fields (`mds_fields("pbf_condicionalidades")`): the SICON series from 2023 on (education, health, warnings, blocks, suspensions and cancellations) and the IGD-M follow-up rates, available since 2015.

Usage

```
mds_pbf_condicionalidades(periods = NULL, localities = "BR", fields = NULL)
```

Arguments

`periods`	Periods to fetch: • `NULL` (default): the last 12 months up to the current month; • a negative number `-n`: the last `n` months up to the current month; • years (`2024`) and/or months as `YYYYMM` (`202401`, `"202401"`).
`localities`	`"BR"` (all of Brazil), state abbreviations (`"PE"`) or 2-digit state codes (`26`), and/or 6- or 7-digit IBGE municipality codes (`2611606`), in any combination. Default `"BR"`.
`fields`	Fields to fetch. `NULL` (default) fetches every curated field of the theme.

Value

A tibble in the format of `mds_data()`.

Examples

```
mds_pbf_condicionalidades(periods = 2026, localities = "PE")
```

`mds_periods` *List the periods available for a field*

Description

Uses Solr facets to count, for each month, how many municipalities have a value for the field and how many of those values are non-zero.

Usage

```
mds_periods(field, localities = "BR", refresh = FALSE)
```

Arguments

`field`	A single field name (see `mds_fields()`).
`localities`	Localities to restrict the count to; same forms as in `mds_data()`. Default `"BR"`.
`refresh`	Logical. Ignore the cached result and ask the API again? Default `FALSE`.

Details

The second count matters: the API returns `0` for months that have not been published yet (for instance, the BPC series carries zeros for every municipality up to the end of the current year). A month where `n_nonzero` is 0 for the whole selection is almost always unpublished, not a true zero. See `mds_drop_unpublished()`.

Results are cached for the session. Large selections are counted in blocks of at most 200 municipality codes (the same split as `mds_data()`); the blocks do not overlap, so their counts are summed.

Value

A tibble with columns `period` (`"YYYYMM"`), `n_localities` and `n_nonzero`, ordered by period. The time of the request is kept in `attr(x, "retrieved_at")`.

Examples

```
mds_periods("bpc_ben_i", localities = "PE")
```

mds_seguranca_alimentar

Food and nutrition security: PAA, Fomento Rural and cisterns

Description

Shortcut for `mds_data()` with the curated food security fields (`mds_fields("seguranca_alimentar")`). Cistern counts are cumulative.

Usage

```
mds_seguranca_alimentar(periods = NULL, localities = "BR", fields = NULL)
```

Arguments

`periods`	Periods to fetch: • `NULL` (default): the last 12 months up to the current month; • a negative number `-n`: the last `n` months up to the current month; • years (`2024`) and/or months as `YYYYMM` (`202401`, `"202401"`).
`localities`	`"BR"` (all of Brazil), state abbreviations (`"PE"`) or 2-digit state codes (`26`), and/or 6- or 7-digit IBGE municipality codes (`2611606`), in any combination. Default `"BR"`.
`fields`	Fields to fetch. `NULL` (default) fetches every curated field of the theme.

Value

A tibble in the format of `mds_data()`.

Examples

```
mds_seguranca_alimentar(periods = 2025, localities = "PE")
```

mds_suas_financiamento

SUAS funding: FNAS transfers, account balances and IGD-M

Description

Shortcut for `mds_data()` with the curated funding fields (`mds_fields("suas_financiamento")`).

Usage

```
mds_suas_financiamento(periods = NULL, localities = "BR", fields = NULL)
```

Arguments

periods	Periods to fetch: • NULL (default): the last 12 months up to the current month; • a negative number -n: the last n months up to the current month; • years (2024) and/or months as YYYYMM (202401, "202401").
localities	"BR" (all of Brazil), state abbreviations ("PE") or 2-digit state codes (26), and/or 6- or 7-digit IBGE municipality codes (2611606), in any combination. Default "BR".
fields	Fields to fetch. NULL (default) fetches every curated field of the theme.

Details

The transfer components add up to `suas_repasse_mun_vl_total_fundo_f` (checked for Pernambuco in 06/2026 and 09/2026). The account balances do **not** add up to the general total, so they should be read one by one.

Value

A tibble in the format of `mds_data()`.

Examples

```
mds_suas_financiamento(periods = 2025, localities = 2611606)
```

---

mds_suas_rede *Social assistance network (CadSUAS)*

Description

Shortcut for `mds_data()` with the curated network fields (`mds_fields("suas_rede")`): CRAS, CREAS, Centro POP, centros de convivencia, centros-dia, unidades de acolhimento, regional CREAS and the professionals registered in each kind of unit (professionals only from 09/2025).

Usage

```
mds_suas_rede(periods = NULL, localities = "BR", fields = NULL)
```

Arguments

periods	Periods to fetch: • NULL (default): the last 12 months up to the current month; • a negative number -n: the last n months up to the current month; • years (2024) and/or months as YYYYMM (202401, "202401").
localities	"BR" (all of Brazil), state abbreviations ("PE") or 2-digit state codes (26), and/or 6- or 7-digit IBGE municipality codes (2611606), in any combination. Default "BR".
fields	Fields to fetch. NULL (default) fetches every curated field of the theme.

Value

A tibble in the format of mds_data().

Examples

```
mds_suas_rede(periods = 202609, localities = "PE")
```

---

mds_themes *List the themes covered by the package*

Description

Each theme groups a curated set of MI Social fields (see mds_fields()) and has a shortcut retrieval function: mds_cadunico(), mds_bolsa_familia(), mds_bpc_suas(), mds_suas_rede(), mds_suas_financiamento(), mds_pbf_condicionalidades() and mds_seguranca_alimentar().

Usage

```
mds_themes()
```

Value

A tibble with columns theme, name, description and n_fields.

Examples

```
mds_themes()
```

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