What is MorfO?

MorfO is a subdivision of Sweden's urban localities (≥2000 inhabitants in the 2015 delimitation) into morphological areas. It is based on Lantmäteriet's (Swedish Ordnance Survey) classifications of land use, buildings and real property units (RPUs). Data from the database PLACE (originating from Statistics Sweden; SCB) has also been used to construct MorfO-areas. Neighbouring RPUs of similar types have been merged together to clusters, where after these clusters have been merged, considering various barriers in the landscape (e.g. rivers, steeps, main roads, railways, etc), and where suitably and possible, landownership structure, development years and tenancies. The version 2205 (May 2022) is still preliminary in some senses.

MorfO and PLACE/GeoSweden

The file "Koord9017_MorfO" links every geographical coordinate (residential as well as work places) in PLACE/GeoSweden to a MorfO (where applicable; i.e. not in rural areas). Errors occur due to the fact that PLACE/GeoSweden coordinates refer to the nearest 100meter-square of the centroid of the real property unit where a person is registered as a residential or employee.

PLACE/GeoSwede coordinates ≥20 inhabitants in 2017, apparently on the "wrong" side of MorfO borders (i.e. in an manufacturing area without dwellings, in a lake, etc, within 100 metres), have been manually adjusted to their nearest alternative MorfO-area in the file "Koord9017_MorfO". 9 215 individuals (2017) are affected by these adjustments.

Coordinate systems

The MorfO polygons supplied here contains polygons in two coordinate systems, RT90 2,5 gov V (EPSG3021) and SWEREF99 (EPSG 3006). RT90 is the system used in the PLACE and GeoSweden databases. SWEREF99 is also commonly used in Sweden.

Attribute data

The following attribute data are supplied:

Område: Individual identity number for each area

Områdesnamn: Name of each area (informal)

Tätortsdel: A bunch of areas (Område) merged into a larger "district unit" named "Tätorsdel". Appears only in urban localities >10 000 inhabitants. Smaller localities may be seen as a unit as wholes. The numbering starts over in each locality (tätort). The numbering starts in the central parts of the locality (tätort). Areas in smaller localities (<10 000 inh) has value "0".

Tätortsdelsnamn: Name of each tätortsdel (informal)

Tätort: SCB number of the locality the area belongs to.

Tätortsnamn: SCB name of the locality the area belongs to.

KnKod: SCB number of the municipality the area belongs to.

Kommun: SCB name of the municipality the area belongs to.

Area: in sq km

Share built-up: the share (in percent) of the MorfO-area occupied by buildings.

Historiskt centrala delar: 1=the historical centre of the locality. 2=MorfO-area adjacent to the historical centre. 0=later developments. Manually assessed.

Studentbostadsområde: 1=student rooms/flats predominating in the area. 0= student homes *not* predominating

Lantliga delar: 1=semi-rural areas in the outskirts of urban localities (doubtfully classified as urban due to automatic classification of Statistics Sweden). 0=urban

Typ manuell; Manually assessed classification of the MorfO-area (based on *bebyggelsetyp*, see below). In some cases the building register is obviously erroneous or irrelevant. A number of types impossible to derive from the register have also been added. The MorfO-areas have been manually categorized into the following types:

Semi-rural or undeveloped = not really built-up area (e.g. larger parks, cemeteries, semi-rural areas)
Detached single family houses= residential area, detached single family houses predominating
Row houses = residential area, row houses predominating
Single fam houses = residential area, mix of detached and row houses predominating
Blocks of flats = residential area, blocks of flats predominating
Residential, mixed types = residential area, mixed types of houses

Perimetre blocks, new = recently constructed perimeter blocks predominating
Perimetre blocks, trad = perimeter blocks established since long predominating (e.g most town centres)
Surrounding blocks = semi-central morphology
Small town centre = morphology of small town centres
Open centre = larger town centre without perimeter blocks
Mixed morphology = mixed types of buildings and localisations

Institutional area = area predominated by school- or hospital buildings, sport facilities, etc
Retail area = area predominated by buildings designated for retail
Industrial area = Buildings for workplaces predominating

Bebyggelsetypkod and *bebyggelsetyp*; rough typology based on classifications in the building register of Lantmäteriet. The first digit indicates residential area (1), activity area (2) or mixed area (9). The second and third digits indicate monotypic (1-5) or mixed (9) development. 0 indicates n/a. The cut-off point for "monotypic" is 60% of the built-up area i.e. if the footprint of residential houses exceeds 60% of the total footprint of all the buildings in the area, it is considered "residential", etc.

0   less than 1% of the area built-up (e.g. cemetery, larger parks, etc)
110 semi-rural outskirts (="Lantliga delar"; see above)
111 residential area dominated by single family houses, detached
112 residential area dominated by single family houses, row houses
119 residential area dominated by single family houses, mixed housing types
120 residential area dominated by blocks of flats
190 residential area, mixed housing types
230 activity area dominated by buildings intended for industrial activities/manufacturing
240 activity area dominated by buildings intended for societal uses (e.g. schools, hospitals, etc)
250 activity area dominated by buildings intended for other commercial uses (e.g. retail)
290 activity area dominated by buildings intended for mixed uses
900 mixed area in terms of buildings (i.e. buildings intended for both residential uses and activities)

Byggperiod: Rough indicator of main construction period. Intended to correspond to various planning ideologies. Based on data in PLACE. Data is missing for many buildings. Manually revised where based on less than 10 buildings. Further revisions needed. -1939, 1940-1964, 1965-1974 (i.e. million homes prgr), 1975-1992, 1992-

Data on building period have been added from PLACE (Voronoi method). This merging method is not perfect. In certain cases, building years ends up in the "wrong" polygon. Even further, the data on building year <1930 are sometimes uncertain. A few specific years were used to "gather" the uncertain cases when the register was compiled. Thus, these data are to be used as rough approximations.

Antal_by_typer: Number of types of buildings (detached single family houses, row single family houses, blocks of flats, industrial buildings, societal buildings, commercial buildings). Unknown and complimentary buildings are omitted. To be used together with *Internal_by_homo*.

Internal_by_homo: Indicates whether the locations of the different kinds of buildings within the MorfO are localized higgledy-piggledy (values near 0) or group wise (value 1). Each building within the MorfO (except complimentary buildings, codes 304, 599, 699) have been supplied with a buffer zone (radius 100 metres), and the entropy index of the six types of buildings specified above have been calculated where after all buffers in the MorfO is normalized to the MorfO. To be used together with *Antal_by_typer*.

Bef90, *Bef00*, *Bef10*, *Bef17*: Indicates the population 1990, 2000, 2010 and 2017. Added on from PLACE; see above "MorfO and PLACE".

Attribute detailed data
Data derived (point in polygon method) directly from cadastral records of buildings. Numbers of buildings and occupied area of the parcel (m^2).

SH_f=detached single family houses

SH_KR=row houses

FH=blocks of flats

OspecBost=unknown kinds of dwellings

Indby= Manufacturing buildings

Samh= Societal buildings

Verksamh= Buildings intended for various kinds of business activities

EkK= Complimentary/technical buildings

Okänd_by=Unknown type of building