

Zeszyt metodologiczny
Migracje ludności. Aspekty badania migracji
wykorzystywane przy opracowywaniu bilansów ludności

Warszawa Warszawa 2018

Methodological report
Migration of population. Aspects of migration surveys used
in the development of population balances



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Preface

We provide the Readers with Methodological Handbook, entitled Migration of population, which discusses statistical surveys on internal and international migrations, conducted in accordance with the Program for official statistics.

Migration of population is the basic element and form of spatial mobility. They refer to territorial movements related with relatively durable change of the place of residence and are seen, next to reproduction and mortality, as a component of demographic changes. In this report the reference is made mainly to those aspects of the survey on internal and international migrations, which are used for development of the estimation of the size and structure of the population by sex and age, both for the domestic and international purposes.

Additionally, the methodological report presents the surveys on migration from historical perspective, taking into consideration the period of 1959-1989. The Authors intended to present some logical continuity considering the manner of registration of movements resulting from the legal acts and political system in Poland at that time.

We hope that the manner of presentation of methodology of the survey will receive the positive reception. We are looking forward to any comments and suggestions of change, which will help in further improvement of the survey and adjustment of its thematic scope to users' needs.

D i r e c t o r

Dorota Szattys

Warsaw, November 2018

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¹ The Appendices are available only in Polish and are attached to the Polish version of *Methodological Report* at the link: <https://stat.gov.pl/obszary-tematyczne/ludnosc/migracje-zagraniczne-ludnosci/zeszyt-metodologiczny-migracje-ludnosci,15,1.html>

Abbreviations

BDL	Local Data Bank
CIS	Statistical Computing Centre
DBW	Knowledge Database
ISO	International Organization for Standardization
ISODS	Information Repository for Polish Statistical Data
MC	Ministry of Digital Affairs
MSWiA	Ministry of the Interior and Administration
MRPiPS	Ministry of Labor, Family and Social Affairs
OBM	Operational Microdata Base
OECD	Organization for Economic Cooperation and Development
PBSSP	Program of public statistics
PESEL	Common Electronic System of Population Register
SRP	State Registers System
OF	Office for Foreigners
SO	Statistical Office
EC	European Community

Introduction

The general purpose of the survey on migration of population is to provide information on movement of population and demographic and social characteristics of migrants. Migration of population can be divided into two general types of migration: internal and international. For more clarity, in some chapters of this Report, the survey methodology was presented separately, while common characteristics of the two surveys were discussed together. Data on migration are collected via surveys presented in the program for official statistics (in the section "Population. Demographic processes") in the following manner:

- "Internal migrations" (1.21.03),
- "International migrations" (1.21.04),
- "Migration stocks" (1.21.14).

Mentioned surveys use mainly administrative data sources, among which the basic sources are PESEL register and civil registration systems in gmina offices. Data from other registers and statistical surveys are also used.

Surveys on migration are permanent, complete and conducted continuously. Data on migration flows and stocks, originating from PESEL register and gmina offices, are collected in the form of individual records.

This methodological report presents main aspects of the survey on internal and international migrations, which are used for development of the estimation of the size and structure of the population by sex and age, both for the domestic and international needs (more detailed information in the methodological report on vital statistics and balances of population, Chapter 6). Other aspects of international migration of population related to repatriation, legalization of stay of foreigners in Poland, international protection, activity of the Border Guard and aspects related to education (concerning foreigners studying in Poland) and work, obtained as part of the survey on migration stocks as secondary data (collected by other institutions), are treated as secondary information. Their sources and places of presentation are listed in Appendix 1.

Legal basis for the surveys on migration constitute the Act from 29 June 1995 on official statistics (Journal of Laws 2018, item 997) and annually published Regulation of the Prime Minister on the Program for official statistics, determining the subjective and objective scope of the surveys for the given year and the types, forms and deadlines for dissemination of the result statistical information. Other legal acts related to migration of population are presented in Appendix 2.

The basic legal act, which, among other, contains the principles for execution of the registration obligation by Polish citizens and foreigners is the Act from 24 September 2010 on civil registration (Journal of Laws 2018, item 1382). International legal act imposing on Poland the obligation of implementation of surveys on migration in accordance with the specific principles is Regulation (EC) of the European Parliament and the Council No. 862/2007 from 11 July 2007 on Community statistics on migration and international protection and the Commission Regulation (EU) no. 351/2010 from 23 April 2010 on Implementation Act of Regulation (EC) of the European Parliament and the Council no. 862/2007 on Community statistics on migration and international protection, in terms of defining categories of groups of country of birth, groups of country of the previous residence, groups of country of the next residence and groups of citizenship.

Results of the survey on internal and international migrations are the source of information for government and local administration, scientific and research establishments, media and individual users of data. Selected data are provided to international databases: Eurostat and OECD.

This Methodological Report comprises of six chapters. The first presents the purpose of the survey, the second - subjective and objective scope of the survey. Third chapter describes sources and data collection and processing methods. Fourth chapter presents the scope of the collected data, basic terms and definitions, as well as measures and indicators used for calculation. The fifth is dedicated to the manners of data presentation and in the sixth, last, chapter the survey evaluation was conducted.

Additionally, to the methodological report there are attached appendices containing, among other, information on secondary data sources in the survey on international migration, structures of data sources and algorithms for derivation of variables. Important part of the annex is the study made by Tadeusz Stpiczyński, an expert in the field of demography and migration, former employee of Statistics Poland which describes methodology and organization of the surveys on internal and international migrations in the period of 1959-1989 (Appendix 8)².

² Description of the manner of conducting the surveys on migration of population in the interwar period contains historical supplement "Methodology and organization of demographic surveys in the period of 1918-1939" attached to the Methodological Report "Vital statistics. Balances of population".

1. Purpose of the Survey

Purpose of the survey on internal migration is to provide information enabling monitoring changes in directions and size of movements of population within the country and characteristics of migrating persons.

Purpose of the survey on international migration is to provide information on departures abroad and arrivals from abroad, enabling to monitor changes of directions and size of emigration and immigration, as well as drawing demographic and social characteristics of migrants.

Results of both surveys are included into balances of the size and structure of the population, by the basic administrative division of the country; they are also used for development of demographic projections. Results of the survey on long-term migration (for the period of at least 12 months) are used in estimations of the residing population.

2. Subjective and objective scope of the survey

2.1. Internal migration

The survey covers all facts of internal migration for permanent residence registered in a given year, understood as a change of the permanent place of registration within the country, given that the previous and the new place of registration are located in different administrative units.

Collection covers also the data on the persons registered for temporary stay for the period longer than 3 months, with permanent place of registration within the country or without permanent place of registration, unless the previous permanent place of registration was located within the territory of Poland. The data are collected as at 31 December of each year.

The survey **on internal migrations for permanent residence** includes the following characteristics of migrants:

- sex,
- age,
- marital status,
- citizenship,
- gmina of previous residence (registration),
- gmina of new residence (registration).

The surveys on **internal migrations for temporary stay longer than 3 months** includes the following characteristics of migrants:

- sex,
- age,
- marital status,
- citizenship,
- gmina of permanent residence (registration),
- gmina of temporary stay (registration),
- declared period of temporary stay (from – to).

2.2. International migration

The survey on immigration covers all facts of immigration for permanent residence registered in a given year, understood as registration for permanent residence in Poland of persons whose previous place of permanent residence was another country.

The survey on emigration covers all facts of emigration for permanent residence registered in a given year, understood as notifying departure for permanent residence abroad (resulting in deregistration from permanent residence in Poland).

There are also collected data on:

- permanent residents of other countries registered in the given year for temporary stay longer than 3 months in Poland;
- permanent residents of Poland, who notified in the given year a departure abroad for temporary stay for the period longer than 6 months;

- permanent residents of other countries, registered for temporary stay for longer than 3 months in Poland, who notified the departure from Poland in the given year or whose declared period of residence in Poland has expired;
- permanent residents of Poland, who notified the return from temporary stay abroad in the given year.

The survey on **immigration for permanent residence** includes the following characteristics of immigrants:

- sex,
- age,
- marital status,
- citizenship,
- country of birth,
- country of previous residence,
- gmina of new residence (registration).

The survey on **immigration for temporary stay longer than 3 months** includes the following characteristics of immigrants:

- sex,
- age,
- marital status,
- citizenship,
- country of birth,
- country of permanent residence,
- gmina of temporary stay (registration),
- declared period of temporary stay in Poland (in gmina of temporary registration).

The survey on **returns of permanent residents of Poland from temporary stay abroad** includes the following characteristics of immigrants:

- sex,
- age,
- marital status,
- citizenship,
- country of birth,
- country of temporary stay,
- gmina of residence (registration) in Poland after returning from abroad,
- date of departure,
- date of return.

The survey on **emigration for permanent residence** includes the following characteristics of emigrants:

- sex,
- age,
- marital status,
- citizenship,
- country of birth,
- country of departure,
- gmina of previous residence (registration) in Poland.

The surveys on **emigration for temporary stay longer than 6 months** includes the following characteristics of emigrants:

- sex,
- age,
- marital status,
- citizenship,
- country of birth,
- country of temporary stay,
- gmina of permanent residence (registration) in Poland,
- declared period of the temporary stay abroad (from – to).

The survey on **departures from Poland of permanent residents of other countries registered in Poland for temporary stay longer than 3 months** includes the following characteristics of migrants:

- sex,
- age,

- marital status,
- citizenship,
- country of birth,
- country of residence,
- gmina of temporary stay in Poland,
- declared period of the temporary stay in Poland (from – to).
- date of deregistration from temporary stay in Poland.

3. Survey organization - sources and data collection methods

The survey on internal and international migration for permanent and temporary stay is fully implemented on the basis of administrative data sources. The basic source of data is PESEL Register. Additionally, data on the population registered for temporary stay longer than 3 months and absent due to departure abroad for temporary stay longer than 6 months - as at 31 December of each year - are also obtained from gmina offices (from registers kept by gminas).

The original source of data on migration for permanent and temporary stay originating from administrative data sources is the information stated by persons changing their place of residence on the forms used for fulfilling the registration obligation.

The forms, from which data are used in migration statistics, are as follows:

- “Notification of permanent residence” - filled in by persons registering for permanent residence - it is the source of data **on internal migration** (both inflow and outflow) **and immigration for permanent residence**;
- “Notification of temporary stay” - filled in by persons registering for temporary stay - it is the source of data **on internal migration and immigration for temporary stay longer than 3 months**;
- “Notification of departure outside the borders of the Republic of Poland” - filled in by persons reporting departure abroad - it is the source of data **on migration, emigration for permanent residence and temporary stay longer than 6 months**;
- “Notification of return from departure outside the borders of the Republic of Poland for longer than 6 months” — filled in by persons reporting return from temporary departure abroad - it is the source of data **on returns of permanent residents of Poland from temporary stay abroad**;
- “Notification of deregistration from the place of temporary stay” - filled in, among other, by residents of other countries leaving Poland before expiry of the declared period of stay - it is the source of data **on departures from Poland of permanent residents of other countries registered in Poland for temporary stay longer than 3 months**.

The above forms have been entered into force on 1 March 2015³, by virtue of Regulation of the Minister of Interior and Administration from 29 September 2011 on determining templates and the manner of completing forms used for execution of the registration obligation (Journal of Laws 2015, item 1852). This Regulation introduced - on the forms important from the point of view of migration statistics - the box “country of birth” aside from the already existing box “place of birth”. Important change was introduction of a new form “Notification of departure outside the borders of the Republic of Poland”.

Before 1 March 2015 emigration for permanent residence was notified on the form “Notification of deregistration from permanent residence”, on which it was necessary to enter the country of departure, in case of deregistration from permanent residence in Poland due to departure for permanent residence abroad.

After 1 March 2015, emigration for permanent residence or temporary stay is notified on the form “Notification of departure outside the borders of the Republic of Poland”. The form “Notification of deregistration from

³ On 1 March 2015, in some municipal/gmina offices the previously used IT systems were replaced by nationally uniform System of National Registers (SRP). This system is comprised, among other, of three registers, most important for citizens and the state, i.e. PESEL Register, Register of ID cards and Civil Status Register. Introduction of the SRP enabled citizens to settle things related with ID cards or civil status acts in any gmina office, regardless of the place of residence.

permanent residence” was amended and, in principle, dedicated for deregistration from permanent residence without the intention of a permanent departure abroad.

Since 1 January 2018, apply forms introduced with Regulation of the Minister of Interior and Administration from 13 December 2017 on determining templates and the manner of completing forms used for execution of the registration obligation (Journal of Laws 2017, item 2411). The regulation retains all of the above names of forms and introduces - what is important - more detailed explanation for persons filling in the forms.

The author unit for the survey on internal and international migration - both for permanent residence and temporary stay - is the Demographic Survey Department, Statistics Poland. The unit implementing the survey is Statistical Office in Olsztyn. The cooperating units are as follows: The Statistical Computing Centre and Statistical Office in Warsaw.

The author unit is responsible for development of assumptions and guidelines for the survey, determination of structure of the datasets, monitoring of implementation of the survey, substantive support of the survey implementing unit in solving problems occurring in the course of the survey, analysis and publication of results.

The Statistical Computing Centre receives datasets originating from PESEL register provided by the Ministry of Digital Affairs, performs formal (technical) control of the data sets, describes the sets for metainformation (Metainformation System), registers them on the lists of sets for administrative sources in the system of the Information Repository of Polish Statistical Data (ISODS) and places in the OBM environment. After developing the sets The Statistical Computing Centre archives them in the Information Repository of Polish Statistical Data.

Statistical Office in Warsaw transforms the sets provided by MC into statistical sets, of which it conducts standardization of entries in different boxes, automatic coding of the country of birth on the basis of the information on the place of birth.

Statistical Office in Olsztyn develops the IT system, processes and validates the data and develops result tables. After completing processing and acceptance of the national set, Statistical Office in Olsztyn provides data sets to other 15 Statistical Offices, also for purposes of the Voivodship Regional Survey Centers (using safe IT environment), with voivodship result tables (each office receives voivodship tables for all voivodships) and the data for the Local Data Banks, “Demography” database, Knowledge Database “Demography”.

The flow chart for the information on migration for permanent residence



Data on migration for permanent residence (internal and international) are quarterly provided by the Ministry of Digital Affairs in digital form.

Data for the first and second half-year are used for development of balance of population.

Data on registrations, namely on internal migration and immigration are provided in a single dataset. Two data sets are created during the stage of processing in SO-Olsztyn. The set concerning immigration is separated. Data

on emigration for permanent residence are provided in a separate set.

In case of internal migration, from the quarterly data there are separated the data on so-called inter-district movement more precisely on migration between districts of the same city. This means separation of registered changes of residence within the same city between districts of: Łódź, Wrocław and Poznań and Warsaw. On the further stage of processing, the data on internal migration no longer contain the data on inter-district movement. The data on inter-district movement for the mentioned cities are developed separately.

After provision and development of the data for 4th quarter, the annual dataset is created and result tables on annual migration flows for permanent residence are developed.

Stages of processing of the data from PESEL register in chronological order:

1. Provision of the datasets by the holder (MC) to CIS;
2. Formal control of the datasets, registration in ISODS, describing in the Metainformation Sub-system and transferring to OBM (CIS);
3. Processing of the dataset obtained from the holder into a statistical dataset (SO in Warsaw);
4. Processing of the dataset (SO in Olsztyn);
5. Development of control tables and then result tables and transferring to Statistics Poland (SO in Olsztyn);
6. Transferring the tables to SOs and the data to the national databases (SO in Olsztyn);
7. Transferring the set to CIS for archiving (SO in Olsztyn).

Until 1965, information on internal migration for permanent residence was presented after developing it with representative method - 10% sample was selected from the complete set of migrants. In the period of 1966-1989 reporting units were evidence units of different gminas. In the period of 1990-2005, the data were provided by the Ministry of Interior on the basis of the documents provided by the evidence units of gminas. Since 2006, the data are obtained from PESEL register. The scope of the data does not cover the information on education transferred until 2005, since in the light of the Act on the population register, the data (as declarative) are not collected in PESEL register.

The data on:

- persons registered for temporary stay longer than 3 months (permanent residents of Poland and permanent residents of other countries), and
- persons, who notified departure for temporary stay longer than 6 months

— collected as at 31 December of each year (migration stocks), are gathered both from PESEL register and from gmina offices. It is envisaged that starting from the data for 2020, the only source for those data will be PESEL register.

From the data on stocks of temporary migrants (on persons registered/absent as at 31 December) there are separated flows of temporary migrations, namely migrations which occurred in the given year.

The other data on:

- departures from Poland of permanent residents of other countries registered in Poland for temporary stay longer than 3 months (in the given year) and
- returns of permanent residents of Poland from temporary stay abroad (in the given year)

originate from PESEL register and are provided once a year by the Ministry of Digital Affairs.

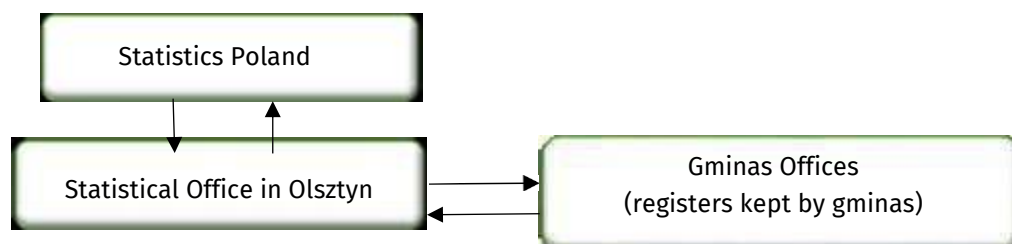
In case of the data on temporary migration obtained from PESEL register, the flow chart for information is the same as the flow of information on migrations for permanent residence (see the above chart).

As it was previously stated, the data on:

- the population registered for temporary stay longer than 3 months and
- persons absent due to the departure abroad for temporary stay longer than 6 months

- as at 31 December of each year — are collected once a year (in January of the next year), also from gmina offices.

The flow chart for information on temporary migrations obtained from gminas



Special application available at Reporting Portal of Statistics Poland is used for this purpose. The application is fed with the data generated - in accordance with Statistics Poland guidelines - from civil registration systems of gminas. Data sets from gminas are transferred to Statistics Poland's server.

SO in Olsztyn - in case of the survey on temporary migration using the data originating from gminas - develops an application enabling provision of data from gminas to Statistics Poland's server, monitors inflow of the data, explains possible errors with gmina offices. It also conducts comparison of the data collected from PESEL register with the data collected from gminas, explaining any observed differences. Then it develops result tables and transfers them to Statistics Poland, Statistical Offices and BDL.

Stages of processing of the data on temporary migration from gminas in chronological order:

1. Sending the information on the survey, structure of the sets and access password to the application used for transferring data to every gmina office (SO-Olsztyn);
2. Inflow of information through the application into the Reporting portal of Statistics Poland to Statistics Poland's server;
3. Validation of data, control of completeness, data processing (SO in Olsztyn);
4. Comparison of the data from gminas with the data from PESEL register (SO in Olsztyn);
5. Development of control tables and result tables – transferring them to Statistics Poland (SO in Olsztyn);
6. Transferring the tables to SOs and the data to the national databases (SO in Olsztyn);
7. Transferring the set to CIS for archiving (SO in Olsztyn).

Until 2008, the data from gmina offices were collected on statistical forms, since 2009 the data are collected in digital form.

4. Variables present in the survey - terms, measures and indicators

4.1. Characteristics of variables

The data collected from data holders are unit data. Each record contains personal variables, including PESEL number of the migrant (if it is allocated) and impersonal variables, including variables concerning migration directions.

Structures of statistical data sets, as compared with the structure of data sets collected from data holders, are enriched with many technical variables, e.g. sub-region, continent, age group, etc., facilitating calculation of result tables.

Gmina of registration for permanent residence, for temporary stay, gmina of the previous residence are coded in accordance with TERYT. The seven-digit code of gmina is the basis for determination of voivodship, powiat and character of locality (urban/rural area) of macro-region, region and sub-region.

Country of citizenship, birth, previous registration, departure, temporary stay, residence are coded (three-digit symbols) in accordance with the international classification of country codes ISO 3166.

Detailed list of variables in the survey (both initial, and those present in the statistical dataset), by subject of the survey, is included in Appendix 3.

4.2. Terms and definitions

Terms and definitions are presented separately for internal and international migrations, given that for international migration there are also presented terms included in Regulation of the European Parliament and the Council no. 862/2007 (Article 2). General terms and those related with national legal acts (the Act on registration of population) are presented.

Internal migration

Internal migrations are changes of the place of residence (permanent residence or temporary stay) within the country, comprising in crossing the administrative border of gmina, including - in case of urban-rural gmina - changing the place of residence within the gmina (from rural areas to urban areas or from urban areas to rural areas).

The following types of migrations are distinguished as part of internal migrations:

- intra-voivodship — movement of population from one voivodship to another,
- inter-voivodship — changes of the place of residence within the same voivodship,
- intra-powiat — movement of population from one powiat to another,
- inter-powiat — changes of the place of residence within the same powiat.

Due to the nature of residence there are distinguished:

- migration for permanent residence (related to registration for permanent residence),
- migration for temporary stay (for longer than 3 months, until 2005 inclusively - longer than 2 months, without changing the place of permanent residence). Temporary registered migrations are registrations for temporary stay longer than 3 months, of a person, whose permanent place of residence is in another gmina (in case of urban-rural gmina also in different urban/rural part of the gmina).

International migration

International migrations are departures abroad and arrivals into a country for the purpose of settling (living permanently) or for temporary stay.

Emigrant is a person departing abroad for the purpose of settling (living permanently) or for temporary stay.

Immigrant is a person arriving from another country for the purpose of settling (living permanently) or for temporary stay.

International migrations for permanent residence means changes of the country of residence.

Immigrations for permanent residence means registrations for permanent residence in Poland of a person who previously was a permanent resident of another country.

Emigration for permanent residence means notification of departure for permanent residence abroad by a permanent resident of Poland.

Immigrations for temporary stay means arrivals of permanent residents of other countries to Poland for a period longer than 3 months (without changing the place of permanent residence). Registered immigration for temporary stay means registration of permanent resident of other countries for temporary stay in Poland for longer than 3 months.

Emigrations for temporary stay means departures of permanent residents of Poland abroad for temporary stay longer than 3 months. Those are departures without an intention of staying permanently abroad (the person retains permanent place of residence in Poland). Emigration for temporary stay registered in PESEL register means notification of departure abroad for temporary stay longer than 6 months.

Valid in the EU Regulation no. 862/2007 contains definitions concerning the intended period of staying in another country lasting at least 12 months. In accordance with those definitions:

Immigration means the action by which a person establishes his or her usual residence in the territory of a Member State for a period that is, or is expected to be, of at least 12 months, having previously been usually resident in another Member State or a third country;

Emigration means the action by which a person, having previously been usually resident in the territory of a Member State, ceases to have his or her usual residence in that Member State for a period that is, or is expected to be, of at least 12 months;

Immigrant means a person undertaking an immigration;

Emigrant means a person undertaking an emigration.

Moreover for migration surveys the following terms are important:

Migration stock means the number of persons, who have arrived to given territory and are staying in this territory - as at...;

Migration flow means the number of persons who arrived/departed in the given period - usually one year;

Citizenship means the particular legal bond between an individual and his or her State, acquired by birth or naturalization, whether by declaration, choice, marriage or other means according to national legislation. It does not indicate ethnic origin of the person and is independent of his or her nationality;

Country of birth means the country of residence (in its current borders, if the information is available) of the mother at the time of the birth or, in default, the country (in its current borders, if the information is available) in which the birth took place;

Foreigner means any person who does not hold citizenship of the country he or she lives in (in accordance with Polish Law, any person not holding Polish citizenship is a foreigner, regardless of the fact of holding or not citizenship/citizenships of other countries);

Stateless person is a person not holding citizenship of any country (stateless persons are classified as foreigners).

Due to the intended duration of stay in the new place of residence, there are distinguished:

- **short-term migration** (for temporary stay for the period from 3 to 12 months),
- **long-term migration** (for permanent residence or temporary stay lasting at least 12 months).

4.3. Measures, indicators and their calculation methods

Data concerning migration are usually presented in absolute numbers or in the form of indicators.

The text below presents the terms and rates concerning migration most frequently presented in statistical studies of Statistics Poland.

The basic **measures of migration** are as follows:

- **Inflow (L_n)** - the number of persons who arrived to the given area in the period t
- **Outflow (L_o)** - the number of persons who departed from the given area in the period t
- **Migration balance (SM)** - difference between the number of persons who arrived and departed from a given territory in the surveyed period t

$$SM = L_n - L_o$$

L_n, L_o - as above

- **Population mobility (O)** – is the total of inflow and outflow

$$O = L_n + L_o$$

L_n, L_o - as above

Migration indicators are:

- **Balance of migration of population per 1000 persons (W_{sm})**
- (mobility growth rate, net migration rate, migration balance rate) – meaning increase/decrease of the population of the given administrative unit/country due to migration, per 1000 residents of the unit/country (as at the middle of the surveyed period)

$$W_{SM} = \frac{L_n - L_o}{L} * 1000$$

where:

L_n, L_o - as above

L - the number of population as at the middle of the surveyed period t or average number of the population of the administrative unit from where this population arrived or from which area the population departed

If the inflow is larger than outflow this means mobility increase.

If the inflow is smaller than outflow this means mobility deficit.

- **Migration inflow W_n and outflow W_o rates** (are the measures of mobility intensity) are calculated in accordance with the following formulas:

$$W_n = \frac{L_n}{L} * C$$

$$W_o = \frac{L_o}{L} * C$$

L_n, L_o, L - as above

C - constans (1000)

It is possible to calculate age-specific inflow/outflow rates, e.g.

$$W_{n(x,t)} = \frac{L_{n(x,t)}}{L_{(x,t)}} * C$$

$L_{n(x,t)}$ - the number of persons at the age x , who arrived to the surveyed unit in period t

$L_{(x,t)}$ - the number of size of population of this unit at the age of x , as at the middle of the surveyed period t

C - constans (1000)

Internal migration

In the internal movement, relevant measures and rates concern movements within a country. Usually, those are the following **measures**:

- **Inflow (L_{nw})** is the number of persons who arrived to a given area from other territorial units of the country in the period t

Usually $t = 1$ year.

There are distinguished following types of inflow:

- from rural to urban areas,
- from urban to rural areas,
- from urban to urban areas,
- from rural to rural areas (concerns areas of rural gminas, not individual rural locality).

Additionally, it is possible to determine inflow to given voivodship from other voivodships, from the same voivodship, etc.

- **Outflow (L_{ow})** is the number of persons who left the given area in the period t , moving to different territorial units of the country
- **Balance of internal migration SM_w** is the difference between the number of persons who arrived at the given time to the given administrative unit from other units in the country and the number of persons who left this units in this period, moving to different units in the country

$$SM_w = L_{nw} - L_{ow}$$

For a country as a whole balance of internal migration equals 0.

The most frequently used **indicator** is:

- **Balance of internal migrations per 1000 of population (W_{SMw})**

$$W_{SMw} = \frac{L_{nw} - L_{ow}}{L} * 1000$$

L_{nw} , L_{ow} , L – as above

The above measures and indicators may be calculated for:

- country, voivodship, powiat, gmina, urban areas, rural areas;
- one year, interval of years, any period.

The most frequently presented are data on inflow, outflow and balance of internal migrations **for permanent residence**.

International migration

In case of international migration, the most frequently used **measures** are as follows:

- **Immigration (I)** is the number of persons, who, in the period t , arrived in the given area from abroad
- **Emigration (E)** is the number of persons who, in the period t , departed abroad from the given area
- **Balance of international migrations (SM_z)** is the difference between the number of persons who arrived in the given period to the given administrative unit from abroad and the number of persons who departed abroad from the unit during this period

$$SM_z = I - E$$

The above measures are often referred to the size of population of the given territorial unit as at the middle of the surveyed period, e.g. the most frequently used **rate** is:

- **Balance of international migrations per 1000 of population (W_{SMz})**

$$W_{SMz} = \frac{I - E}{L} * 1000$$

symbols: I , E , L – as above

Most frequently the above measures are given for international migration **for permanent residence**.

5. Data presentation method

The data on the number of internal and international migrations and on the balance of migration for permanent residence by territorial division are published in “Demography” database in so-called balance table (data for the first six months of a year, data for a year).

All result tables concerning migration for permanent residence (internal and international) are published in

- Demography – Migration of population – Internal migration –annual data (May),
- Demography – Migration of population – Emigration –annual data (May),
- Demography – Migration of population – Immigration –annual data (May).

The selected information is presented in:

Statistics Poland’s publications:

- Population. Size, structure and vital statistics in territorial division. As at 30 June (October)
- Population. Size, structure and vital statistics in Poland by territorial division. As at 31 December (April)
- Demographic Yearbook (November)
- Statistical Yearbook of the Republic of Poland (December)
- Concise Statistical Yearbook of Poland (July)
- Statistical Yearbook of Regions (December)
- Statistical Yearbook of Agriculture (December)

Internet databases:

- Local Data Bank - Population - Internal and international migrations (May)
- Knowledge Database - Demography - Internal and international migrations for permanent residence (June)
- Knowledge Database - Demography - Internal and international migrations for permanent residence per 1000 of population (June)

Additionally, implemented for the needs of different users, among other:

- government administration,
- local government administration of different levels,
- scientific and research establishments,
- universities (academic teachers and students),
- national and local media.

Selected links to websites containing data on migrations in the form of publications and databases:

- Local Data Bank <https://bdl.stat.gov.pl/BDL/dane/podgrup/temat>
- Demography Database <http://demografia.stat.gov.pl/bazademografia/Tables.aspx>
- Knowledge Database Demography <http://swaid.stat.gov.pl/EN/SitePagesDBW/Demografia.aspx>
- Geostatistical Portal <https://geo.stat.gov.pl/en/>
- Demographic Yearbook <https://stat.gov.pl/en/topics/statistical-yearbooks/statistical-yearbooks/demographic-yearbook-of-poland-2017,3,11.html>
- STRATEG <https://strateg.stat.gov.pl/?lang=en-GB>

6. Survey assessment

Statistics receives information on all facts of migration for permanent residence registered in in the given year (registrations for permanent residence and notifications on permanent departures abroad). The transfer also includes information on all persons registered for temporary stay and on notifications on temporary departures abroad (as at 31 December). The number of records corresponds to the number of registered events. Therefore, the data fully reflect the image of migration resulting from the registers.

It should be stated that sets transferred by data holders contain in records - with some exceptions - complete information.

Missings concern civil status, e.g. in 2017, 4.5% of migrants aged 15 or older, changing place of permanent residence within the country, did not have civil status determined. Sporadically, international migrations do not include the data on the country of citizenship.

There is a significant number of missing data concerning the country of birth, e.g. in the 2nd quarter of 2018, the number of records with the information on the country of birth amounted to:

- in case of emigration only 16.4% of all records,
- in case of internal migration and immigration - 22.6%.

Nevertheless, at the stage of processing, the country of birth is determined for 99.8% of migrants on the basis of the information on the place of birth.

6.1. Data quality and efforts on improving them

The transferred data are controlled and corrected by the systemic validation principles of the system holder. However, they are also subject of internal control during processing in the statistical system. Verification covers: compliance of the territorial symbols with the current version of TERYT (sometimes it happens that the gmina of the previous place of residence has an invalid TERYT code in its registers - it was valid when the person was registering at the previous place of residence), relations between the age and civil status of the person, compliance of the country codes with the dictionary of countries (with the ISO 3166 classification).

The missing codes of the countries of birth are determined on the basis of the information on the place of birth. In the case of doubts, e.g. locality with the same name exists in several countries, the information on the country of the previous residence and the country of citizenship is used.

Statistics Poland collects data on temporary migrations from PESEL register and from gmina offices. The data are compared; sheets for every gmina are developed. For many years, the tables containing comparisons have been transferred to the data holders (to the Ministry of Interior and Administration and gminas). At that time the transfer also included the information on the errors in the data sets observed by statistics during processing. At present, SO in Olsztyn analyses and explains the differences in cooperation with gminas.

In 2017, the difference between the data from gmina offices and the data from PESEL register concerning internal migrations amounted to 0.9% and has significantly decreased, as compared to the previous years, e.g. in 2007, it amounted to 8.4%.

In case of migration for temporary stay this difference is significant - in 2017 it amounted to 60.1%, while in 2007 - 24.3%. The reason for such a large difference were legal conditions - in previous years not all foreigners registering for temporary stay in Poland received PESEL number at the moment of registration, thus foreigners without the PESEL number were not included into PESEL register, while gmina offices included those persons.

In case of persons temporarily staying abroad, the difference also increased after the introduction of the SRP the number of such persons resulting from the data provided by gmina offices in 2017 was by 21.4% higher than the number resulting from the data from PESEL register (in 2007 the difference amounted to 12.8%).

Additionally, the analysis includes significant increases and decreases in the number of registrations for temporary stay in different gminas, as compared to the previous year, and reasons for them are explained.

Statistics Poland actively participates in providing opinions on legal and implementation acts which are important for collection of data on migrations. It made a successful notion for collection of data on the country of birth of migrants, on the duration of temporary stay/absence, for appropriate provisions in the act on registration of population and on registrations forms, as well as for introduction of relevant explanations on the registration forms, decreasing the possibility of choosing incorrect form for de-registration (see item 6.2).

6.2. Data credibility assessment

Data on migration collected from administrative sources include only the registered facts of migration. These are not all facts of migration, because not all persons changing place of residence notify this fact in civil registration units. Therefore, completeness of the survey depends on the degree of fulfilling the registration obligation by Polish citizens and foreigners⁴. Completeness of internal migrations for permanent residence and immigrations for permanent residence is higher than of emigration for permanent residence. Particularly underestimated are migrations for temporary stay, both internal and international.

In case of internal migrations for temporary stay underestimation of data results from frequent failure to fulfil the registration obligation by the persons temporarily staying in the localities in which they work or study. The obligation is not enforced in Poland; many institutions interacting with those persons require only stating the place of residence (not the place of registration). Additionally it should be highlighted that while in previous years, university dorms conducted registration of students, now the obligation is left to the students who often do not fulfil it.

In turn immigrants temporarily staying in Poland often do not register at all. The most frequent reasons are: the lack of agreement for it of the owner of the dwelling they rent or the lack of knowledge concerning regulations on that.

The most underestimated are the data on emigration for temporary stay abroad, since such usually trip is not notified in civil registration units. Thus, the return, if occurs, is also not reported.

It is very difficult to estimate the degree of underestimation of the different data; however, data from other sources indicate that it is significant. In accordance with the results of the NC 2011, in March 2011, 2 017.5 thousand of permanent residents of Poland temporarily resided abroad for the period longer than 3 months. Data from gminas - as at 31 December 2011 – indicated that there were 54.9 thousand of such persons. It suggests that only about 3% of persons temporarily leaving abroad are notifying their departure. In case of the data on registrations for temporary stay in Poland of permanent residents of other countries, the NC 2011 is not very good source for comparison, since data on immigrants temporarily staying in Poland obtained in the Census are underestimated. Another point of reference may be the data from the Office for Foreigners on the valid documents stating the foreigner's right to stay within the territory of Poland. By the end of 2017, in accordance with the data from gmina offices, 112.2 thousand of foreigners were registered for temporary stay in Poland, while in accordance with the data from the OF, the valid documents confirming the right to stay in Poland were held by 239.2 thousand persons (it should be noted that the right to stay is not equivalent with staying, while at the same time some of foreigners may stay in Poland on the basis of visa, which is not included in the OF data).

In the recent years decrease in quality of Polish statistics concerning emigrations originating from PESEL register had been observed. One of the reasons might be the introduction of the System of National Registers in 2015 and the new registration forms (see item 3). Lack of appropriate explanations on registration forms "Notification of de-registration from permanent residence" resulted in frequent erroneous use of this form for de-registration from permanent residence in Poland due to permanent departure abroad. Completion of this form resulted in deregistration of the person, by absence of the box "country of departure" on the form (until March 2015) resulted in such a fact not being treated as permanent emigration.

In the recent years, the degree of realization of the registration obligation by the persons changing place of residence was also affected by the intention of liquidation of the registration obligation stipulated in the act on registration of population, which entry into force has been postponed. The fact may have affected the increase in the lack of registration of changes of place of residence - many persons were convinced that the registration obligation does not exist in Poland.

Since 2018, more explanations appeared on the registration forms enabling correct selection of a form for notification of a departure for permanent residence abroad.

Due to the fact of underestimation of Polish administrative data, estimations are being developed for the value of long-term international migration flows, at the national level. The data are presented in the Demographic Yearbook at <https://stat.gov.pl/en/topics/statistical-yearbooks/statistical-yearbooks/demographic-yearbook-of-poland-2017,3,11.html>

³ The amended Act on registration of population, the provisions of which entered into force on 1 January 2018, retained the registration obligation both for Polish citizens and for foreigners.

and provided to Eurostat database and there available at <https://ec.europa.eu/eurostat/data/database>. For 2016, value of the long-term immigration flow from Poland was estimated on 208.3 thousand persons, while the value of the long-term emigration flow on 236.4 thousand persons (on the basis of administrative data the values amounted to 61.7 and 47.1 thousand, respectively).

In mentioned estimations Polish administrative data and data from other countries are being used - so-called "mirror statistics". Among Polish data, beside from the data from PESEL register, there are being used information concerning legalization of stay of foreigners within the territory of Poland, originating from the Office for Foreigners. When using the data from other countries, it is necessary to take into account methodology of their collection, in particular the attention is paid to the period of staying/absence, which is included in the development of the data on immigration and emigration by some countries.

Such estimations are not performed for the smallest units of the territorial division. Due to the necessity to develop balances of population for the lowest level of territorial division of Poland - for gminas - in its development administrative data on migrations are being used, as they are available for any level (of which for gminas).

Due to the fact that this report is mainly dedicated to the aspects of migration, which are included into the study of balances of population, namely the administrative data concerning registrations/de-registrations, it doesn't contain detail presentation of the estimation method. It should be highlighted that Statistics Poland is conducting works on continuous improvement of the method.

There is also conducted methodological work on development of a new method for determination of size of the population. The main objective of the method is to use larger than before number of registers and administrative systems to obtain information on the actual (real) place of residence of the inhabitants of Poland.

Implementation of the developed data on the size and structure of the population in accordance with the new method is envisaged after the 2021 Population and Housing Census.

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