



Migration flows based on border crossings: Data integration for (sub)national estimates.

Republic of Moldova

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Context & Premises


High flow of **unregistered** international migration

Alignment of the national statistical system with international and European standards

Implementation of the concept of ***usual residence*** in official statistics (Census)

Implementation



 Schweizerische Eidgenossenschaft
Confédération suisse
Confederazione Svizzera
Confederaziun svizra

Swiss Agency for Development and Cooperation SDC
Agenția Elvețiană pentru Dezvoltare și Cooperare
Швейцарское управление по развитию и сотрудничеству

Partnerships



GOVERNMENT

OF REPUBLIC OF MOLDOVA

MINISTERUL AFACERILOR INTERNE | GUVERNUL REPUBLICII MOLDOVA



POLIȚIA DE FRONTIERĂ



PUBLIC SERVICES AGENCY

Stages passed in estimation of international migration

1

Identify suitable data **SOURCE** & methodology

2

Get **DATA** from the identified data holder

3

Apply international **DEFINITION** using border crossing data

4

Data analysis, imputation and **PROCESSING**

5

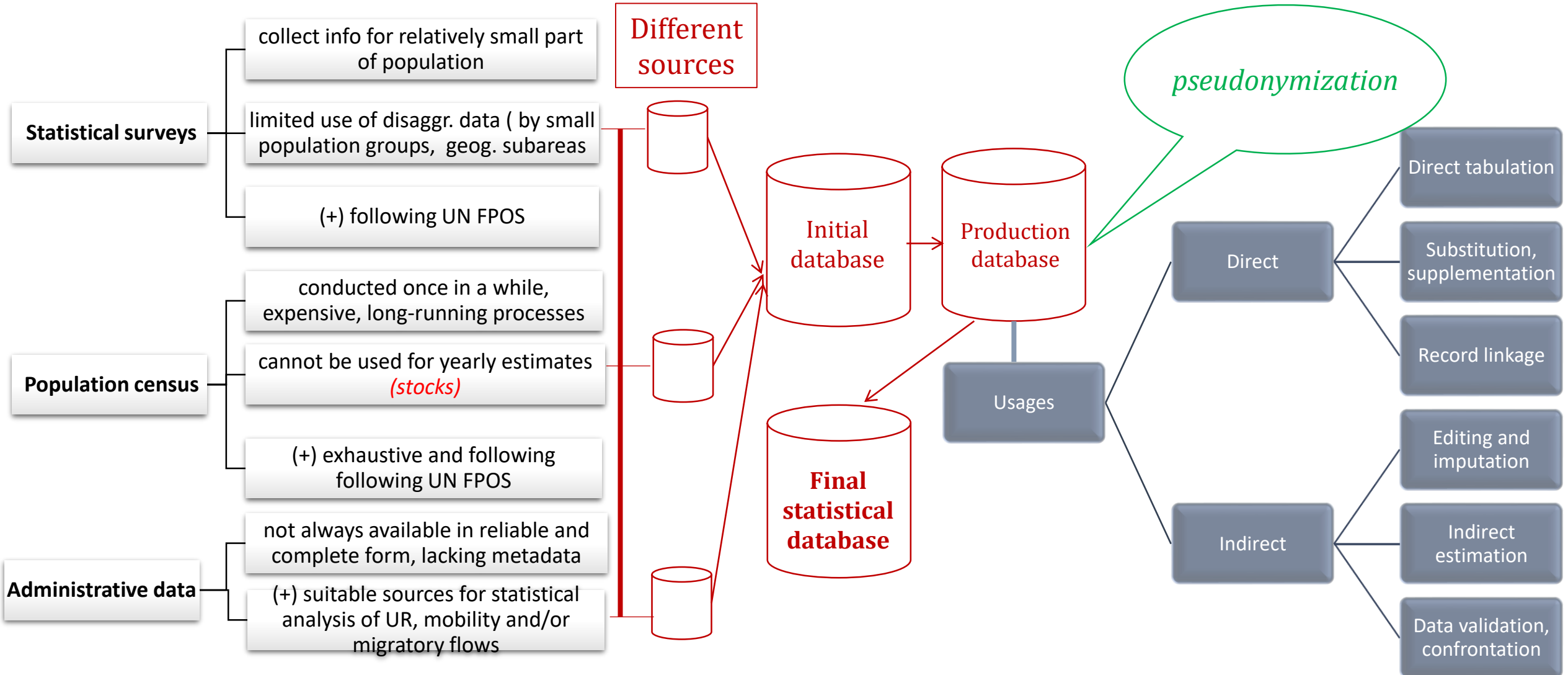
Calculate the (e/i)migrant **STATUS** at national level

6

Calculate the (e/i)migrant **STATUS** at sub-national level



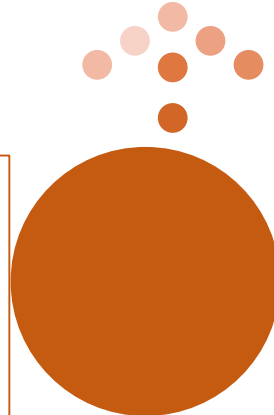
1. Data sources (backbone of IS "Population & migration statistics")



1. Identify suitable ... METHODOLOGY

= Threshold =

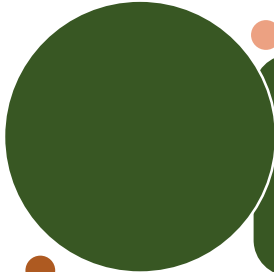
183 (6 months+1 day)
275 days (9 months)
305 (10 months)
335 (11 months)



temporary absences
measured

= TOLERANCE =

182 (6 months)
90 days (3 months)
60 (2 months)
30 (1 month)



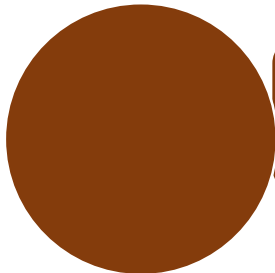
temporary absences
excluded

T-1

T+1

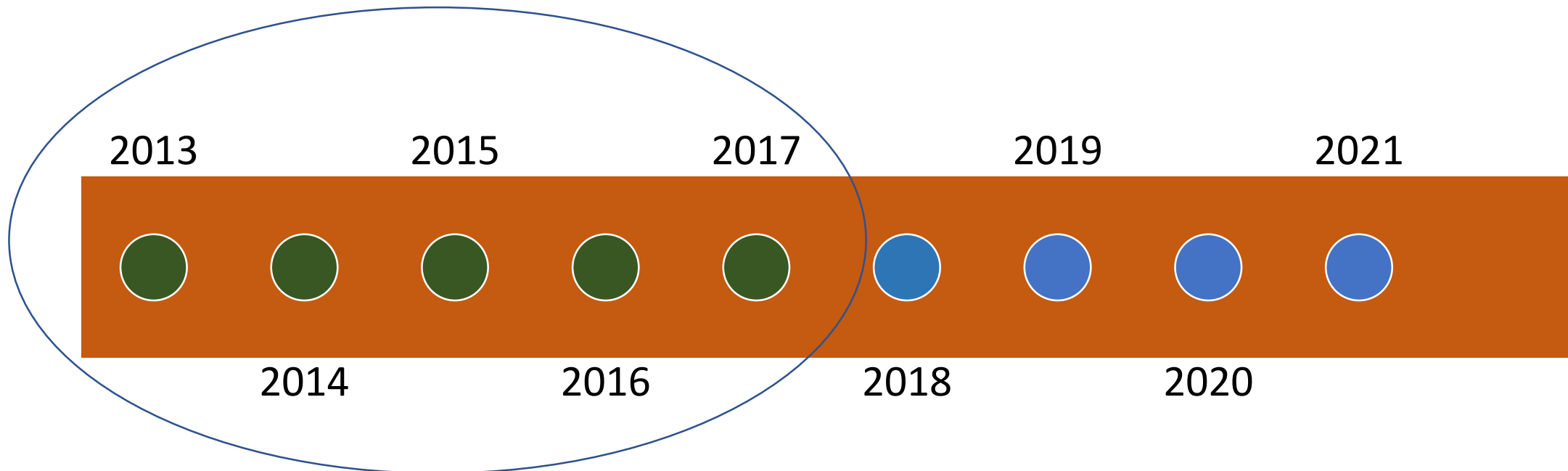


T



reference period

2. Get DATA from identified data holder



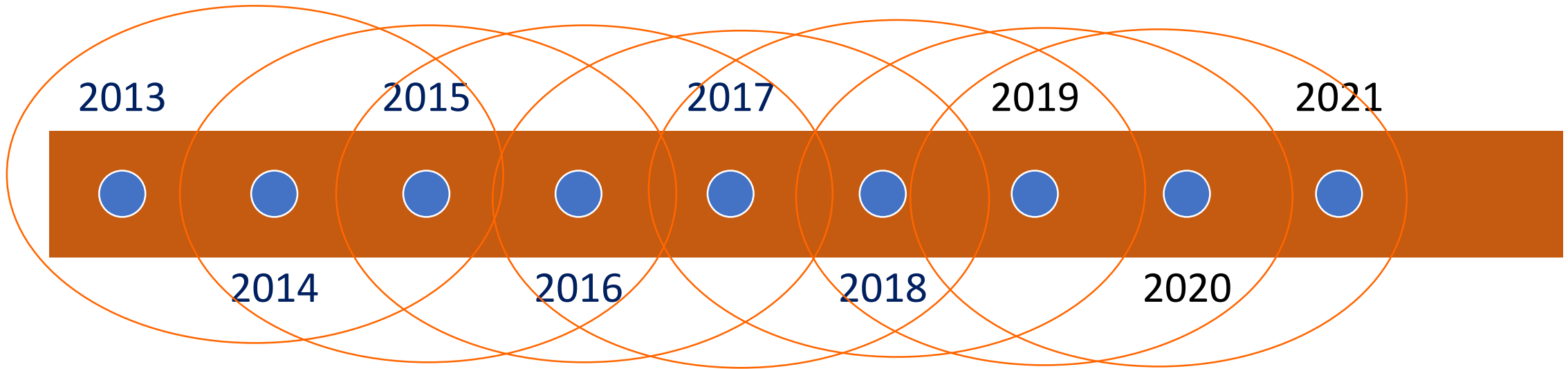
Y	crossings	unique persons
2013	11,097,009	1,558,048
2014	10,752,441	1,477,918
2015	12,203,259	1,594,607
2016	13,174,721	1,665,127
2017	13,467,354	1,742,104
2018	13,014,154	1,635,606
2019	13,034,988	1,632,251
2020	3,787,353	775,190
2021	5,451,280	1,002,123

RM citizens

foreign citizens

Y	crossings	unique persons
2013	7,667,424	1,163,364
2014	7,420,109	1,080,351
2015	8,804,900	1,291,662
2016	10,125,732	1,488,449
2017	10,006,456	1,589,730
2018	10,353,572	1,714,162
2019	10,961,150	1,787,970
2020	3,372,200	688,588
2021	5,602,630	1,054,525

2. Get DATA - build DATABASE for each year



2020 is the last year for which international migration (final) was estimated based on the described methodology.

For 2021, the NET migration is estimated based on the international migration rate of the 2020 and these estimates are used for annual estimation of the usual resident population (1st of January).

3. Apply DEFINITION - international migration

Immigrant

a person who entered the Republic of Moldova and stayed in the country for at least 12 months after arrival, after living abroad for at least 12 months.



Emigrant

a person who exited the Republic of Moldova and lived abroad for at least 12 months, after living in the Republic of Moldova for at least 12 months before exiting the country

Temporary cumulative stays of up to **3 months are not considered as a break of the 12 months periods**

4. Data analysis, imputation, processing at MICRO level

Identification of "illogical" itineraries

	IDNP	gender	birth_date	set	id	m_dir	citizenship	date	Y
201	18	m	10.07.1990	1	676	exit	MOLDOVA	03.11.2015	2015
204	19	m	11.09.1991	1	679	exit	MOLDOVA	27.01.2013	2013
205	19	m	11.09.1991	1	680	entry	MOLDOVA	28.04.2013	2013
206	19	m	11.09.1991	1	681	exit	MOLDOVA	11.09.2013	2013
207	19	m	11.09.1991	1	682	exit	MOLDOVA	24.01.2014	2014
208	19	m	11.09.1991	1	683	entry	MOLDOVA	24.01.2014	2014
209	19	m	11.09.1991	1	684	exit	MOLDOVA	28.01.2014	2014
210	19	m	11.09.1991	1	685	entry	MOLDOVA	23.05.2014	2014
211	19	m	11.09.1991	1	686	exit	MOLDOVA	01.09.2015	2015
217	20	m	19.10.1990	1	692	entry	MOLDOVA	09.10.2013	2013

- movements of a person for 2013-2015
- illogical itinerary

Imputation of a missing movement

	IDNP	gender	birth_date	set	id	m_dir	citizenship	date	Y
249	18	m	10.07.1990	1	676	exit	MOLDOVA	03.11.2015	2015
250	19	m	11.09.1991	1	679	exit	MOLDOVA	27.01.2013	2013
251	19	m	11.09.1991	1	680	entry	MOLDOVA	28.04.2013	2013
252	19	m	11.09.1991	1	681	exit	MOLDOVA	11.09.2013	2013
253	19	m	11.09.1991	1	681	entry	MOLDOVA	18.11.2013	2013
254	19	m	11.09.1991	1	682	exit	MOLDOVA	24.01.2014	2014
255	19	m	11.09.1991	1	683	entry	MOLDOVA	24.01.2014	2014
256	19	m	11.09.1991	1	684	exit	MOLDOVA	28.01.2014	2014
257	19	m	11.09.1991	1	685	entry	MOLDOVA	23.05.2014	2014
258	19	m	11.09.1991	1	686	exit	MOLDOVA	01.09.2015	2015
259	20	m	19.10.1990	1	692	entry	MOLDOVA	09.10.2013	2013

- imputed movement, the date is at the half of the illogical itinerary

Assignment of a date to the missing movement

4. Data analysis, imputation, processing – **MACRO** level

Imputing the locality for children 0-15 years at the aggregated level by age, sex and migration status

The structure of women aged 20-44 by localities and migration status



Imputing the locality for adults of 16+ years at the aggregated level by age, sex and migration status

The structure of all persons 16+ by localities, age, sex and migration status



Imputing the locality for foreigners at the aggregated level by age, sex and migration status

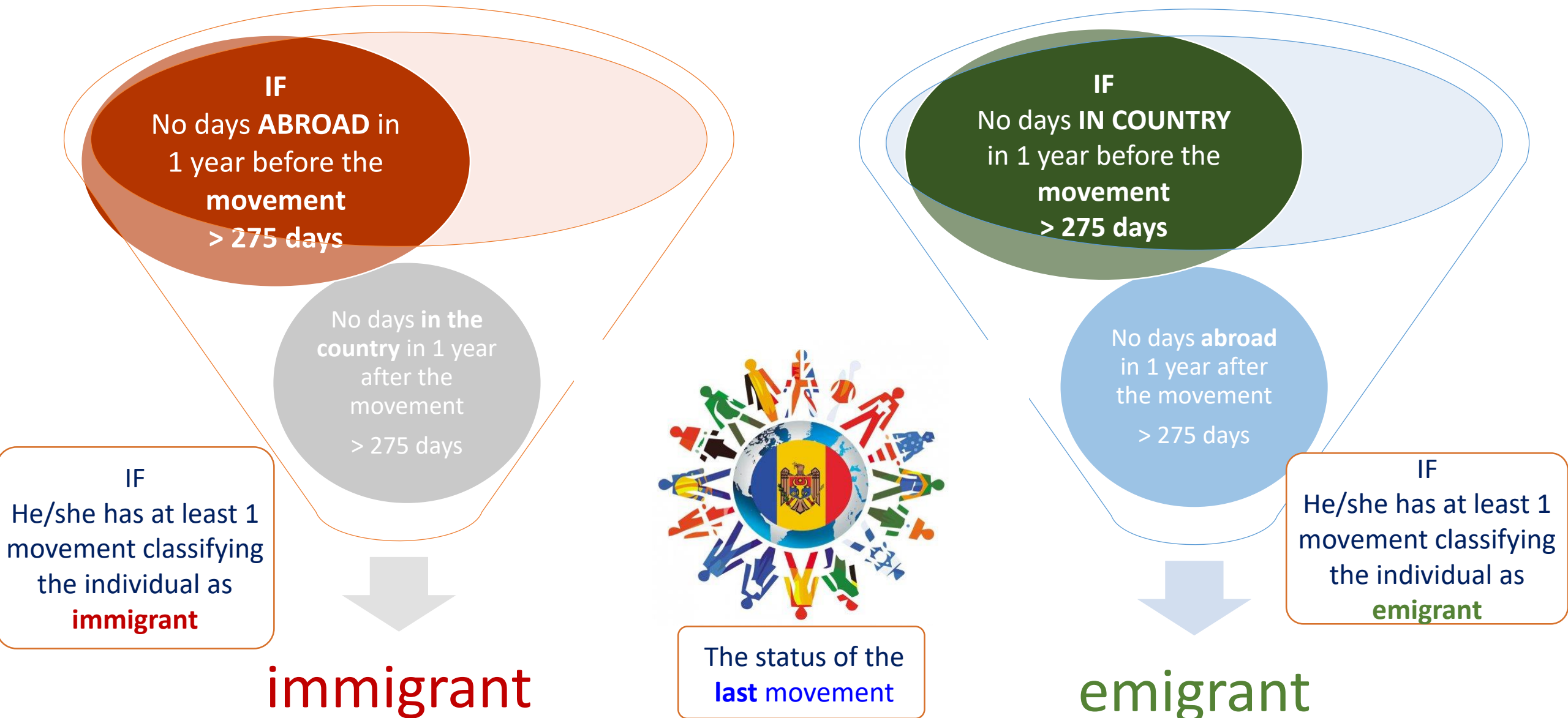
The structure of the localities for Moldovans by localities, age, sex and migration status

On average, per year, there are 10,1% of **immigrants** who do not have locality of residence:

- (1) children until they receive an ID card (around age 16),
- (2) adults with a domicile withdrawn for various reasons (by request, request of the new homeowner, decision of the law enforcement bodies, etc.
- (3) foreigners who in fact are unidentified Moldovans (multiple citizenship).

On average, per year, there are 18,6% of **emigrants** who do not have locality of residence.

5. Calculating migration status – by MOVEMENTS / individuals



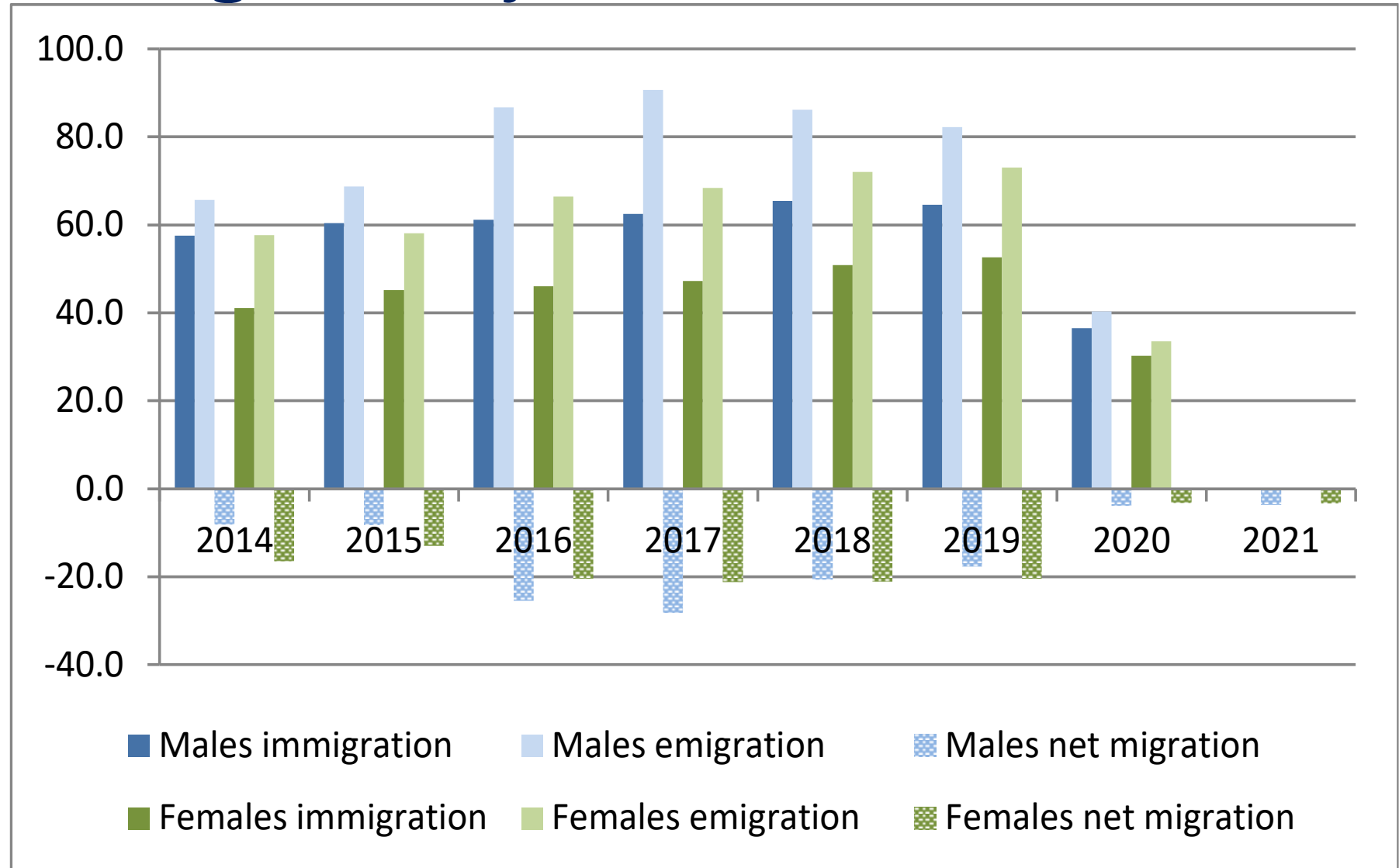
International migration by sex, 2014-2020, thou persons

2020

66,8 Immigrants

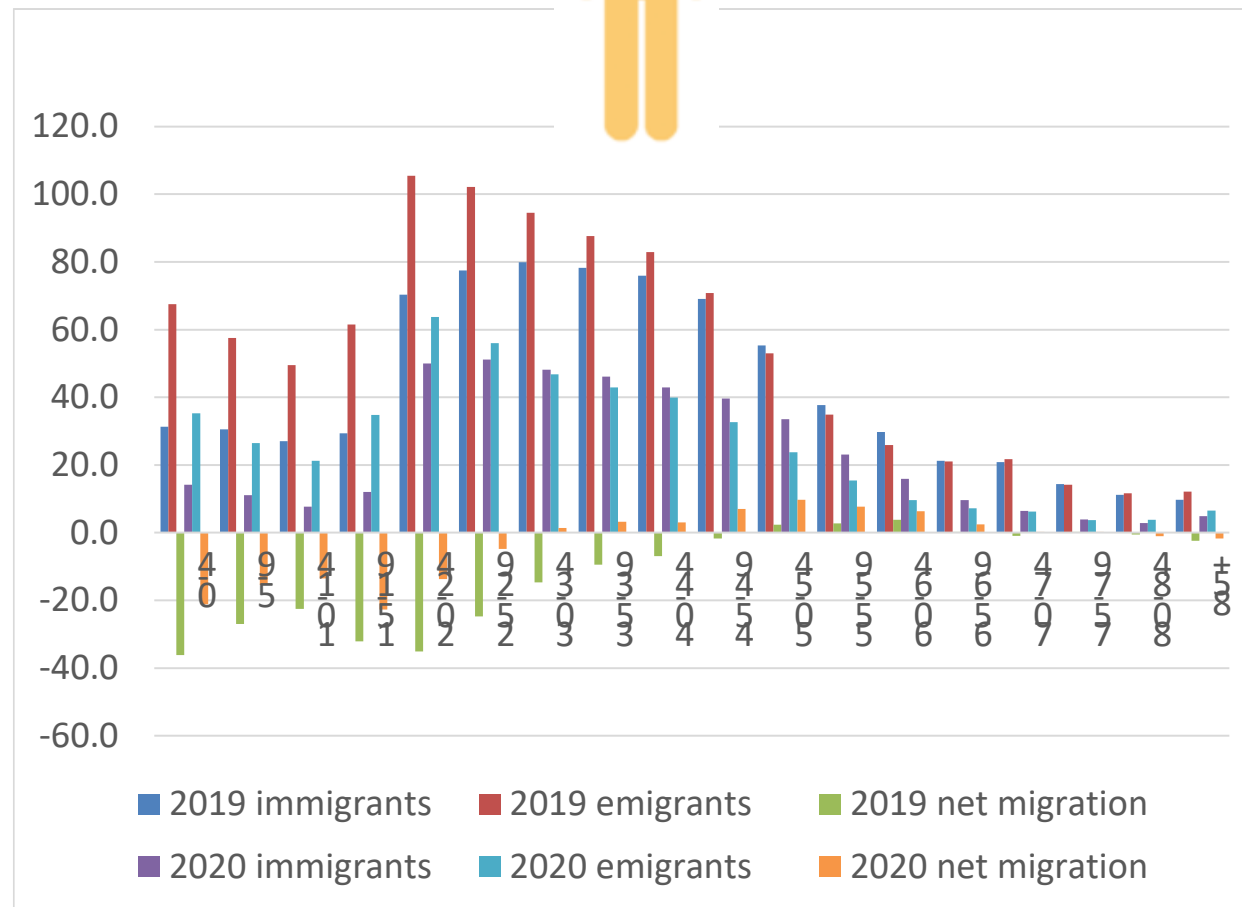
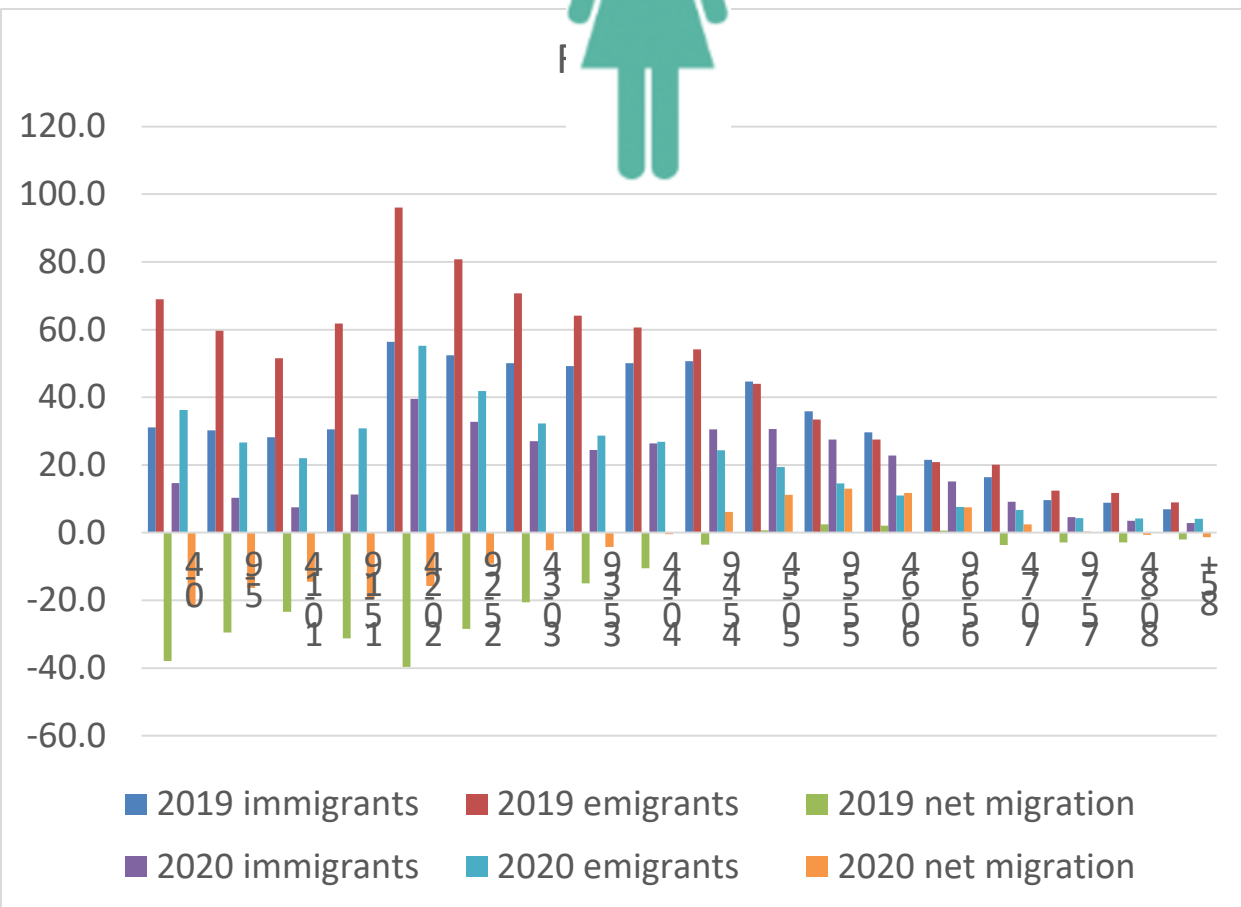
73,9 Emigrants

- 7,1 Net migration



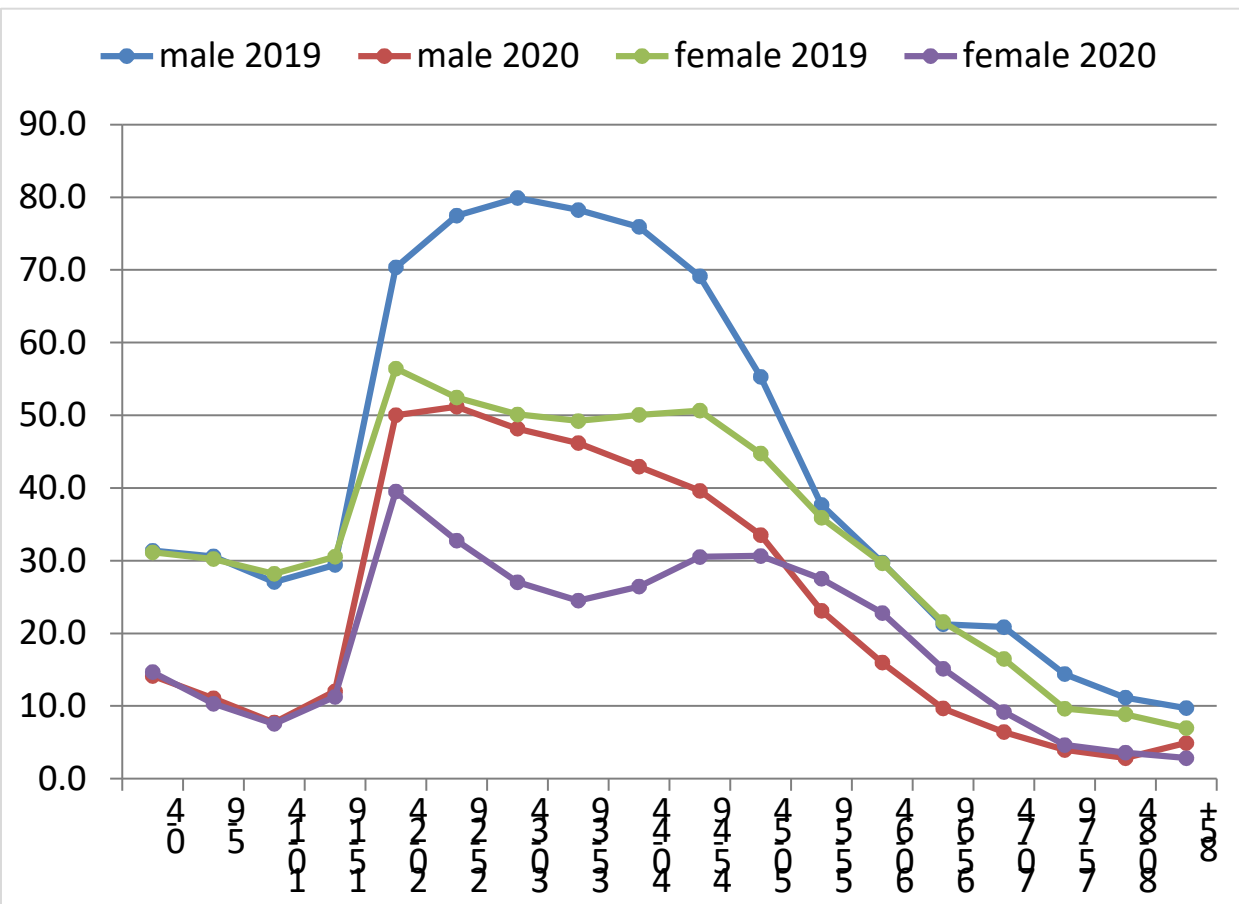
* - provisional data, based on the assumption that migration rates by age and sex registered in **2021** remained the same in **2020**

International migration by sex and age groups, 2019-2020, rates by 1000 persons

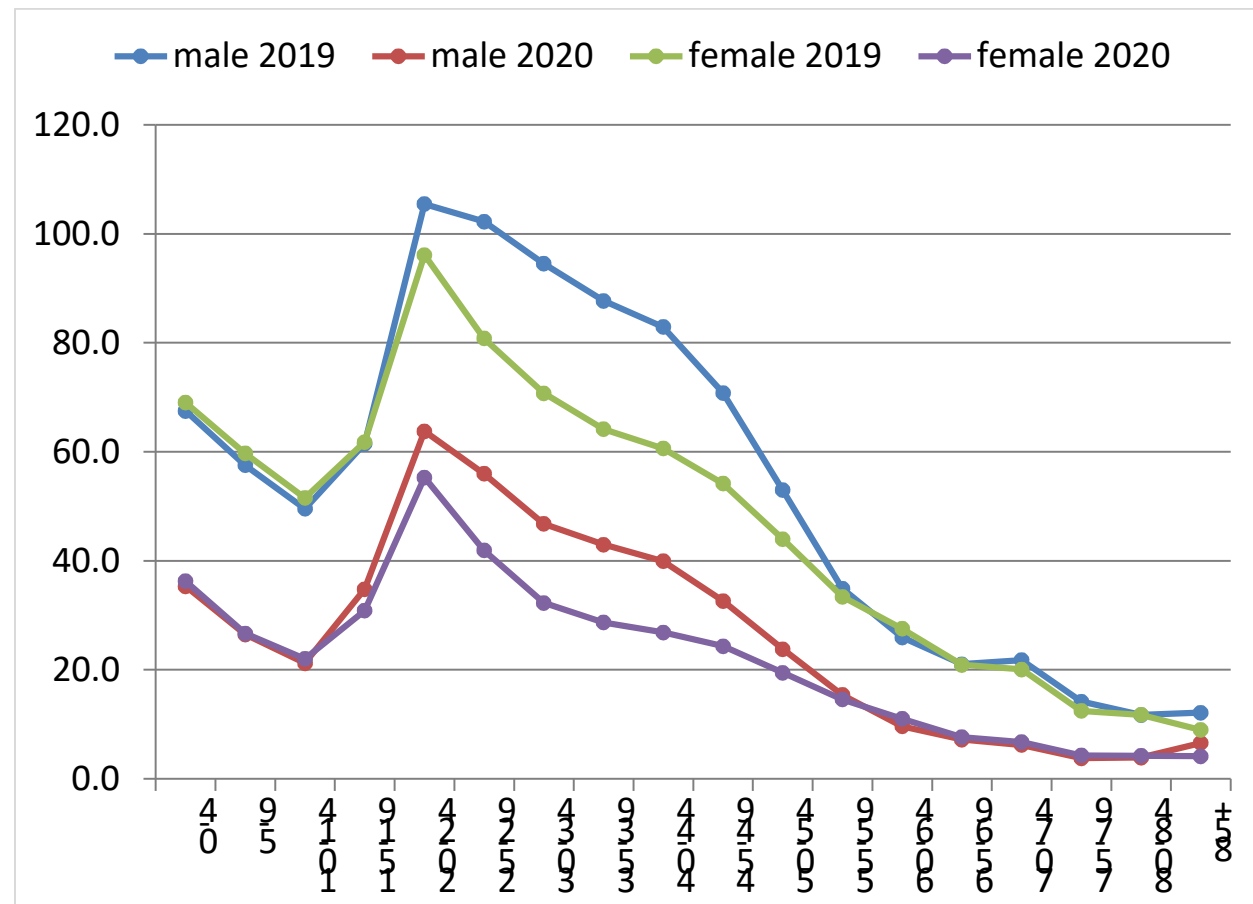


International migration by sex and age groups, 2019-2020, rates by 1000 persons

International **IMMIGRATION** rates by sex and age groups, 2019 and 2020



International **EMIGRATION** rates by sex and age groups, 2019 and 2020



CHALLENGES versus ACTIONS



- Lack of *reliable data* on international migration based on the definition of *place of usual residence*
- Access to *individual/personal* data from administrative sources
- *Double/multiple citizenship* and uncontrolled border through Transnistria region
- Processing *big volumes* of records



- Comparative analysis, negotiation, communication
- Pseudonymization procedures applied
- Usage of several software for data imputation, editing and processing of big volumes (170 mln. crossings for the period 2013-2021) (*Oracle, Visual FoxPro, R, STATA, SPSS*)

~~im~~possible

Conclusions

- Moldovans are **intensively involved in international migration** in **both directions** challenging existent migration definitions and concepts
- Migration should **not only** be measured in terms of the **net migratory balance**: high exposure of RM inhabitants to other cultures and countries may have extremely **positive implications** and open **new opportunities**
- Based on a **solid basis**: the border-cross recording of entrances and exits to/from RM at **individual level**, but still **pseudonymized** data
- For each individual it was possible to **calculate accurately** how much **time was spent abroad/in-RM**
- Migration estimates was calculated using **international recommended definitions**
- For the **first time** in many years RM has a **full and realistic picture** of **migration flows** in and out the country

Next steps

- **Provide reliable** migration statistics for policy design, funding, monitoring & evaluation, planning and research
- Get access to border-crossing records of entrances and exits to/from RM at **individual level** (not pseudonymized) via the Government **interoperability platform**
- Finalize the development of **Information System** on “Population and Migration Statistics”, integrating **administrative data** (State Population Register, border crossings, legal migration and asylum data, death/birth records, other)
- Disseminate the usually resident population and migration at **subnational level** (by areas of residence, districts, commune)



Thank you!



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