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EVALUATION

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Proposal for a

REGULATION OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL on European statistics on population and housing, amending Regulation (EC) No 862/2007 and repealing Regulations (EC) No 763/2008 and (EU) No 1260/2013

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Glossary

Term or acronym	*Meaning or definition*
Census	Decennial data collection on population and housing census
Census Hub	Web tool for central access to European census outputs
Census Regulation	Regulation (EC) No 763/2008 on population and housing censuses
CES	Conference of European Statisticians
Demography Regulation	Regulation (EU) No 1260/2013 on European demographic statistics
ECOFIN Council	Economic and Financial Affairs Council
EEA	European Economic Area
EFTA	European Free Trade Association
EPC	Economic Policy Committee
ESOP	European statistics on population
ESS	European Statistical System
ESSC	European Statistical System Committee
EU	European Union
Eurobase	Public database of European statistics disseminated by Eurostat
Eurostat	Statistical office of the European Union
FTE	Full-time equivalent
ISG	Interservice group of the European Commission
Migration Regulation	Regulation (EC) No 862/2007 on Community statistics on migration and international protection
MS	Member State(s) of the European Union
NSI	National statistical institute
OPC	Open public consultation
TEC	Treaty establishing the European Community
TEU	Treaty on European Union
TFEU	Treaty on the Functioning of the European Union
UNECE	United Nations Economic Commission for Europe

1. INTRODUCTION

1.1. Political and legal context

According to Article 9 of the Treaty on European Union (TEU), every national of a Member State, in addition to their national citizenship, is also a citizen of the European Union (EU). To develop policies to benefit the people of Europe, EU institutions need timely, reliable, detailed, harmonised and comparable European statistics. EU institutions also need a reliable and comparable count of the whole population of the EU. This will help the institutions to uphold the principle of non-discrimination in all their activities, and to defend individual citizens' rights as enshrined in Article 10 of the Treaty on the Functioning of the European Union (TFEU) and the Charter of Fundamental Rights of the European Union. The Commission is required to monitor and report on the EU's demographic situation in line with Article 159 TFEU. EU institutions also need accurate and comparable population figures for administrative and procedural purposes, e.g. for qualified majority voting in the Council.

Population statistics are the backbone of all social statistics, as they provide the most accurate and up-to-date reference information on the entire population and its basic demographic characteristics. An accurate picture of the population, with very good coverage and location information, is indispensable for any more detailed annual population estimates, sample surveys, and regional analysis. Population estimates are also needed to obtain per capita indicators in statistics. Population statistics provide the input for preparing population projections for the EU's long-term economic and budgetary projections in particular. Population statistics are also useful more generally for formulating and implementing the EU's economic, social and cohesion policies.

The Treaties oblige the European Parliament and the Council to adopt measures for producing official statistics where necessary for EU policies (Article 338 TFEU, formerly Article 285 TEC). Over the past three decades, many EU policy areas have experienced strongly increasing and evolving needs for complete, coherent, comparable, reliable and regular European statistics. The statistics needed in these policy areas cover population, demography and international migration, and are crucial to support evidence-based policymaking.

After an initial period of voluntary collections of data from Member States, various EU institutions expressed a need for a better common basis for population and migration statistics, including for legislation at EU level[1]. Therefore, the Commission (Eurostat) initiated legislative work in 2005 on several legal instruments to establish a legal basis for these statistics to address policy needs in a proportionate way. Relevant legal acts adopted as part of this legislative work include:

- Regulation (EC) No 763/2008 on population and housing censuses[2] ('Census Regulation');
- Regulation (EU) No 1260/2013 on European demographic statistics[3] ('Demography Regulation');

[1] For instance, the 2001 Laeken European Council, the 2003 Thessaloniki European Council, and European Parliament resolution 2003/2157 of 6 November 2003.

[2] Regulation (EC) No 763/2008 of the European Parliament and of the Council of 9 July 2008 on population and housing censuses (Text with EEA relevance) (OJ L 218, 13.8.2008, p. 14).

- Regulation (EC) No 862/2007 on Community statistics on migration and international protection[4] ('Migration Regulation'), in particular Article 3 thereof on international migration, migrant stocks and acquisitions of citizenship.

The Commission also adopted various implementing measures to help implement these regulations. In this staff working document, we will use the term 'the intervention' as a general term to describe these three Regulations and their implementing measures.

Many EU policy areas have become increasingly dynamic over the past decade in response to social, economic and environmental developments. These developments include demographic changes[5], migration[6] and the increasing exposure of Europeans to natural disasters in the wake of climate change[7]. Even while this intervention was being implemented, evidence-based policymaking in many areas has continued to evolve. This policymaking now requires even more harmonised, detailed, frequent and timely European statistics on population and migration. Many of these policy areas also require statistics on small or functional geographies (e.g. grids and cities, and breakdowns by functional area such as urban and rural areas). Moreover, statistical needs are expected to continue to change rapidly in this increasingly dynamic policy and societal environment.

1.2. Purpose of the evaluation

The purpose of this evaluation is to assess official statistics at EU level on population, demographic events and international migration. The evaluation aims to assess whether these statistics have been providing sufficient data evidence to support both EU policymaking and the functioning of EU political decision-making. This includes evaluating the relevance, coherence, effectiveness, efficiency, EU value added, and statistical quality (a contextual ad hoc criterion) of all mandatory and voluntary European statistics produced in these domains. In particular, relevance will be measured against: (i) the initial policy and institutional needs before 2005(at the start of the intervention), and (ii) current and evolving needs over time. The geographic coverage of the statistics in question is the European Economic Area (EEA), and the time coverage includes all reference dates and periods of statistics between 1 January 2008 (the first reference year of the Migration Regulation) and 31 December 2020. This means in particular that census outputs only from a single round (2011) can be fully evaluated. This is because statistical outputs from the previous 2001 round were produced before work began on the intervention, and outputs from the ongoing 2021 round will not be available for the whole EU at the time of concluding this evaluation. However, administrative and procedural aspects of the 2021 EU census round (e.g. cost and burden estimates, coherence with international recommendations) will be included in this evaluation.

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[3] Regulation (EU) No 1260/2013 of the European Parliament and of the Council of 20 November 2013 on European demographic statistics (Text with EEA relevance) (OJ L 330, 10.12.2013, p. 39).

[4] Regulation (EC) No 862/2007 of the European Parliament and of the Council of 11 July 2007 on Community statistics on migration and international protection and repealing Council Regulation (EEC) No 311/76 on the compilation of statistics on foreign workers (Text with EEA relevance) (OJ L 199, 31.7.2007, p. 23).

[5] See Commission Report on the Impact of Demographic Change, 2020.

[6] Communication on A European Agenda on Migration, COM(2015) 240,

[7] Communication on The European Green Deal, COM(2019) 640.

The results of this evaluation will inform a decision on whether follow-up action is needed to update or redevelop the existing legal base given current and further evolving needs for policies and decision-making in the EU.

1.3. Scope of the evaluation

This evaluation covers European statistics that describe the population residing in the EU. The key underlying concept is thus the place of residence of a person according to a given definition. Currently, annual statistics on demographic characteristics of the resident population are published under the Demography Regulation. This evaluation also covers more detailed statistics in areas such as the family, household and housing situations of the resident population. These more detailed statistics are currently published every 10 years under the Census Regulation. Finally, this evaluation will also consider annual statistics published under Article 3 of the Migration Regulation on: (i) migrant stocks (resident population with migration history); (ii) international migration flows (changes of residence between countries both within and entering/leaving the EU); and (iii) citizenship. A comprehensive table of datasets used for this evaluation is provided in Annex 3.

A number of statistical collections are out of the scope of this evaluation. For example, statistics on asylum and managed migration under Articles 4 to 7 of the Migration Regulation address administrative and judicial events related to the migration of non-EU nationals. These statistics complement the statistics based on actual residence under this intervention, and the legal basis was revised only very recently[8]. Statistics on asylum and managed migration are therefore beyond the scope of this evaluation. In addition, European statistics on persons and households based on data at individual level collected from samples are out of the scope of this evaluation, as these are governed by a separate legal basis only recently adopted[9]. Derived statistical indicators in the European System of Accounts and regional statistics based on population counts are also out of scope and will not be evaluated. All these related or dependent European statistics are therefore considered external factors to the intervention evaluated here.

The evaluation covers all Member States and EEA/EFTA countries.

The time period covered by the evaluation is 2005-2021. This includes the population and housing censuses in the EU of 2011 and 2021.

2. BACKGROUND TO THE INTERVENTION

2.1. Initial problem/needs statement

Until 2005, to ensure the functioning of the EU in accordance with the Treaties, policymakers needed a variety of statistics for evidence-based policymaking in areas such as: (i) social and economic cohesion; (ii) structural and regional cohesion; (iii) civil

[8] Regulation (EU) 2020/851 of the European Parliament and of the Council of 18 June 2020 amending Regulation (EC) No 862/2007 on Community statistics on migration and international protection (Text with EEA relevance) (OJ L 198, 22.6.2020, p. 1).

[9] Regulation (EU) 2019/1700 of the European Parliament and of the Council of 10 October 2019 establishing a common framework for European statistics relating to persons and households, based on data at individual level collected from samples […] (Text with EEA relevance) (OJ L 261I, 14.10.2019, p. 1).

rights; (iv) migration and internal affairs; (v) the environment; (vi) energy and (vii) health. In particular, common official statistics for the EU were needed on:

- population and housing censuses (conducted every 10 years) covering population, family, households, and housing at a very detailed territorial level (down to the municipality);
- annual population and demographic events including at national and regional levels; and
- annual international migration at national level, including acquisition of citizenship.

In addition to policy needs, EU institutions need high-quality statistical information on population and demography for other purposes. This includes but is not limited to:

- regular, total, usually resident population at national level for voting in the Council[10];
- regular population projections for EU long-term economic and budgetary projections within the European Semester[11];
- annual monitoring of the EU's demographic situation[12].

Figure 1 presents a detailed visual map of the various statistics needs and their policy and institutional drivers.

Before the intervention (i.e. before the introduction of the Census, Demography and Migration Regulations), Member States produced all related statistics at EU level on a voluntary basis coordinated by Eurostat. These statistics were produced partly under a soft formalisation through so-called gentlemen's agreements between Eurostat and the national statistical institutes (NSIs). However, the experience with these arrangements before 2005 showed that this approach could not meet the policy and societal needs at the time. In particular, there were serious and well-known gaps in the completeness, coherence, comparability, and punctuality of statistics disseminated at EU level until 2005.

Article 338 TFEU (formerly Article 285 TEC) obliges the legislator to adopt measures for the production of official statistics where necessary for EU policies. Given the shortcomings with this system as it existed until 2005, the Commission took the initiative and proposed legislation to address the gaps in the statistics needed for evidence-based EU policymaking.

2.2. Description of the intervention and its objectives

The main reason for legislative action taken after 2005 was the insufficient completeness, coherence, comparability, timeliness and punctuality of the most important topical statistics. Before 2005, these data were produced based on voluntary data collections.

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[10] The 2001 Treaty of Nice introduced an element of weighting by total usually resident population of the Member States in Council voting procedures. Since 1 November 2014, this is expressed in the qualified majority voting under Article 16(4) TEU.

[11] The ECOFIN Council mandates to the EPC on the economic and fiscal implications of ageing populations establish a need for common demographic projections to be provided by Eurostat (initial doc. ECFIN/EPC(2006)51285 of 22 May 2006, latest doc. 8743/21 adopted on 18 June 2021).

[12] Required under Article 159 TFEU (ex Article 143 TEC).

Given the experience of weaknesses in the statistics caused by the unregulated nature of the voluntary data collections, Eurostat considered regulation at EU level necessary to address the statistical-quality gaps effectively. The Commission therefore adopted new proposals in 2005, 2007 and 2011[13] for the Migration, Census and Demography Regulations respectively. These proposals are introduced in Section 1 as the legislative inputs to the Migration, Census and Demography Regulations (see also Section 3). The explanatory memoranda accompanying these proposals outline the policy drivers, at the time the legislative proposal was being drawn up, for the statistical needs identified. Figure 1 sets out a detailed list of these policy drivers.

Eurostat prepared the legislative proposals to address the objectives of this intervention in a proportionate but effective way. In particular, the *general objectives* were to:

- provide sufficient data evidence (sufficient in terms of statistical content and quality) on national and regional population, demography and international migration for EU policymaking;
- address EU institutional needs for statistical information of the highest quality for the functioning of the EU in accordance with the Treaties.

The *specific objectives* were to:

- disseminate complete, comparable, reliable (i.e. accurate, timely and punctual) and regular EU-level statistics on:
  - persons, families, households, dwellings and housing arrangements from population and housing censuses;
  - demography, population stock, and population balance;
  - international migration and citizenship;
  - total population at national level for qualified majority voting in the Council;
- provide a sufficient basis of demography and migration statistics to produce population projections for EU long-term economic and budgetary projections; and
- ensure by comprehensive, accurate and comparable metadata including statistical-quality documentation (see Annex 3 for a comprehensive inventory of data collections in each domain).

Finally, *operational objectives* breaking down each specific objective are to provide individual statistical products (e.g. exact cross-tabulations needed for a given statistical unit) serving detailed needs for a given reference time or period. At this level of detail, the three legislative proposals deliberately sought a balance between two sets of objectives: (i) essential operational objectives, to be included as data and metadata transmission obligations in the legal base; and (ii) auxiliary operational objectives, to be implemented by initiating or continuing voluntary data collections outside the legal base. Annex 3 contains a comprehensive tabulation of operational objectives/outputs (datasets).

All three legislative proposals upheld a basic principle to ensure proportionality, i.e. to limit regulation to the minimum necessary to deliver on these objectives. This was achieved by proposing to regulate only the essential statistical output (operational objectives) in terms of statistical content and quality. With a legal base adopted at EU level, the targeted quality improvements were to be achieved as follows:

[13] Proposals COM(2005) 375, COM(2007) 69, and COM(2011) 903.

Table 1 – Pre-/post-intervention situations for each domain

Domain	**Pre-intervention** (Member States send statistics to Eurostat voluntarily)	**Post-intervention** (Member States send statistics to Eurostat in line with EU regulations)
Population and housing census	Census rounds 1990/1991, 2001	Census rounds 2011 (completed), 2021 (ongoing)
Demography	Annual data until ref. year 2012	Annual data for ref. years 2013-2020
International migration incl. citizenship	Annual data until ref. year 2007	Annual data for ref. years 2008-2020

- *completeness* (of data and metadata across all Member States) through reporting obligations for all Member States on a common set of mandatory data and metadata;
- *coherence* (across statistical outputs for a single reporting country) and *comparability* (across reporting countries for a single statistical output) through legal provisions on common statistical definitions, topics and breakdowns, accompanied by harmonised methodological guidance in each domain;
- *timeliness* (reducing the time between the end of the reference period and dissemination of a statistical output) and *punctuality* (reducing the time between the scheduled and actual dissemination of a statistical output) through legally fixed common transmission deadlines for all mandatory data and metadata collections.

However, such firm output orientation entails particular need for comprehensive quality reporting across the entire statistical production process (the last specific objective). This was reflected in dedicated provisions on mandatory metadata and/or quality reporting across all proposals.

2.3. Baseline and points of comparison, including evolution of policy needs

Most statistics included in this intervention had already been collected on a voluntary basis before 2005. The situation before 2005 – i.e. the content and quality of all relevant statistics disseminated at EU level until the first reference periods of the legal bases[14] – is thus the baseline to which the post-intervention situation should be compared. In all three statistical domains (the population and housing census; demography statistics; and international migration statistics), the pre-intervention situation is given by all public data and metadata available on Eurobase for the respective domain-specific pre-regulation periods. The post-intervention situation is given by all public data and metadata on Eurobase for the respective domain-specific regulated periods up to and including 2019 (see the concise overview in Table 1 and detailed data collections to be traced back across the points of comparison in Annex 3[15]).

[14] First regulated reference years following the intervention: 2008 for mandatory statistics under the Migration Regulation, 2011 for the EU census programme under the Census Regulation, and 2013 for mandatory statistics under the Demography Regulation.

[15] The census domain is special because the currently ongoing 2021 census round is only the second one implemented under the Census Regulation. Therefore, information from the 2021 round will be

The pre- and post-intervention situations are also helpful points of comparison for determining the problem/needs definition. More precisely, two reference times are fixed: (i) the pre-2005 situation establishing the original policy drivers that led to the statistical needs identified for the intervention; and (ii) the post-2021 situation anticipating evolved policy drivers for the medium-term future after the 2021 census round. This comparison will be a key element of this evaluation, enabling an updated assessment of the relevance of the intervention in various policy contexts that experienced a great deal of change over the past decade (see Figure 1 outlining the evolution of broad policy drivers between 2005 and 2021; details are presented under the relevance assessment in Section 5).

Therefore, a related key element of this evaluation is a detailed assessment of the voluntary data collections that were initiated in parallel to the implementation of this intervention, often to address ad hoc urgent policy needs for statistics. These include, for instance, data collections on new migration flows after the United Kingdom left the EU and new infra-annual statistics responding to the COVID-19 pandemic. All of these ad hoc voluntary data collections are also included in Annex 3.

Finally, there is a general lack of sufficiently detailed background information on this intervention. This is because requirements for impact assessments at the time (before 2005) were far less detailed than they are today. For this reason, significant information gaps were encountered when attempting to reconstruct a comprehensive and reliable picture of the baseline (the pre-2005 situation and initial assumptions determining the intervention). Therefore, the default baseline is sometimes complemented by specific accessible points of comparison – for example a hypothetical scenario of perfect statistical quality – when evaluating certain quality indicators.

included in this evaluation to the extent it is available (mostly procedural information such as resources and costs, but no statistical outputs yet), and the year 2021 is listed in Table 1 in parentheses.

Figure 1 – Detailed problem definition including initial EU policy and institutional drivers, the relation of these drivers to specific objectives, and how the problems and needs have developed from then until today

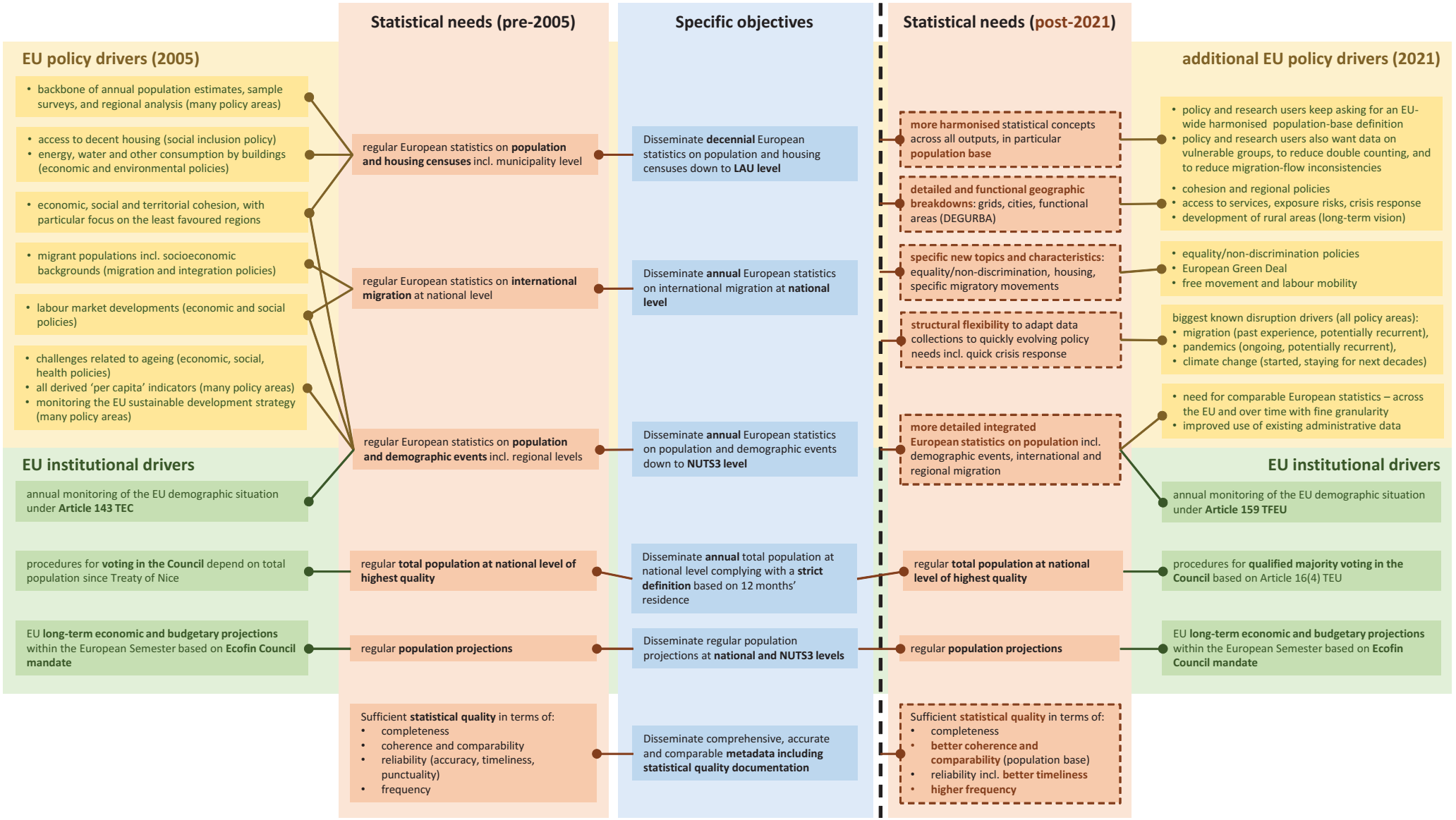
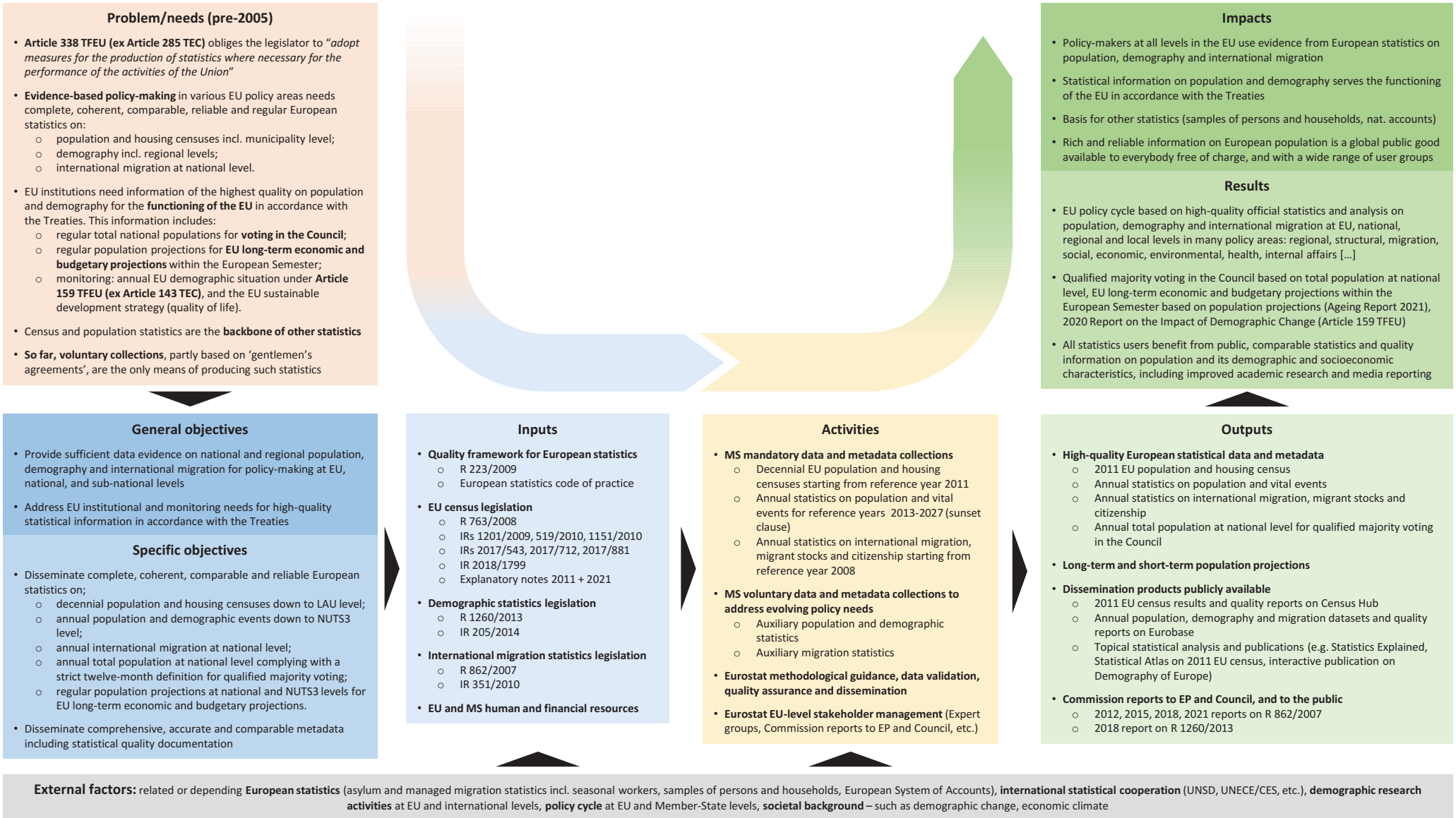


Figure 2 – Complete intervention logic: from initial needs to current impacts



3. IMPLEMENTATION/STATE OF PLAY

A comprehensive overview of the intervention logic and its implementation steps down to current results and impacts is provided in Figure 2.

3.1. Inputs and external factors

As noted in Section 2, the intervention logic is closely linked to the legislative initiatives put forward by the Commission. The Commission considered the legal acts (i.e. the Census, Demography and Migration Regulations) to be the key instruments for producing outputs (high-quality official statistics and quality documentation) that deliver on the objectives of the intervention. Therefore, all legal acts adopted under the intervention are considered as inputs for this evaluation[16]. Figure 2 contains a comprehensive list of these inputs. In this context, Regulation (EC) No 223/2009 on European statistics[17] (the 'European statistics Regulation') extends the mentioned legislative inputs by providing the general legal base for a common quality framework for all official statistics produced at EU level, including all domains evaluated here.

The resource inputs to the intervention were the human and financial resources at both EU level (mainly Eurostat staff and calls for grant proposals organised by Eurostat) and national level (mainly staff of NSIs and national funding for the data collections). The adoption of the legal bases created legal obligations that ensured the stable availability of these resources during the implementation of the Census, Demography and Migration Regulations. A quantification of these resources will be a central element of the evaluation method described in Section 4.

Various external factors provide important context – either to the implementation process or to the outputs of the intervention. These external factors are addressed in the paragraphs below.

Related European statistics are those official statistics disseminated by Eurostat that are similar enough to the domains addressed by this intervention to raise problems of coherence and interdependence. However, they are conceptually or methodologically distinct enough that they were considered out of scope of the intervention. Among the most relevant domains are asylum and managed migration statistics, which are mostly regulated under Articles 4-7 of the Migration Regulation and deal with administrative and judicial procedures related to migration (e.g. asylum applications and decisions, Dublin procedures, enforcement of immigration legislation, and residence permits). There are close conceptual links to the statistics considered under this intervention, but the relevant statistical units are profoundly different: resident population of a given geographic area and its changes (this intervention) versus migration-related administrative or judicial acts. Furthermore, samples of persons and households generally

[16] This also follows previous approaches to evaluating statistical interventions, e.g. SWD(2019) 425 Evaluation of the European Fishery Statistics.

[17] Regulation (EC) No 223/2009 of the European Parliament and of the Council of 11 March 2009 on European statistics and repealing Regulation (EC, Euratom) No 1101/2008 of the European Parliament and of the Council on the transmission of data subject to statistical confidentiality to the Statistical Office of the European Communities, Council Regulation (EC) No 322/97 on Community Statistics, and Council Decision 89/382/EEC, Euratom establishing a Committee on the Statistical Programmes of the European Communities (Text with relevance for the EEA and for Switzerland) (OJ L 87, 31.3.2009, p. 164).

depend on the full-enumeration population statistics under this intervention (sampling frames). They thus share many statistical concepts and definitions of this intervention, but on the other hand they are fundamentally different from a methodological perspective. The recent adoption of Regulation (EU) 2019/1700 on European statistics relating to persons and households, based on data at individual level collected from samples (footnote 9) has created a new context for the population statistics evaluated in this staff working document. Finally, national accounts[18] use population as well as household and dwelling figures from censuses to produce derived indicators.

International statistical cooperation creates an environment of common concepts and definitions in which many ESS members participate. Eurostat actively contributes to – and promotes – this environment at various levels to foster the international harmonisation of official statistics. Key aspects of this environment are the statistical coordination and governance activities coordinated globally by the UN Statistical Division and for the European region of the United Nations by the UN Economic Commission for Europe (UNECE). Networks of experts organised by these United Nations bodies produce and regularly update international guidelines (such as the Recommendations for the Censuses of Population and Housing endorsed by the Conference of European Statisticians).

Demographic research activities at EU and international levels have been an element of attention during the period of implementation of this intervention. One demographic research activity has been in particular focus recently: the concept of actual presence. This concept is related to the usual-residence concept, and has been the focus of recent research using new data sources to measure migration and cross-border mobility, such as mobile devices, social media networks, satellite images and internet platforms[19]. Another area of research where Eurostat is an independent actor is the harmonised population projections for the whole EU based on European demographic data. Eurostat corresponds regularly with the international community in this area and with ESS partners. Eurostat projections are a key input to EU long-term economic and budgetary projections mandated by the Council (footnote 11).

3.2. Description of the current situation

Based on the above inputs and external factors, Member States engaged in several activities to implement the three Regulations comprising the intervention. The first activity by Member States was the development and operationalisation of mandatory data and metadata collections under the newly adopted legal bases. Eurostat also took action, further processing the data collected from Member States to help the dissemination of European statistics. Eurostat's action in this area focused in particular on data validation and quality assurance, as well as on methodological guidance where necessary to implement common statistical concepts coherently in national data collections. Finally, Eurostat also collaborates at EU level and internationally including with statistical producers, policy users, EU institutions and international organisations (see Section 4).

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[18] Regulation (EU) No 549/2013 of the European Parliament and of the Council of 21 May 2013 on the European system of national and regional accounts in the European Union (Text with EEA relevance) (OJ L 174, 26.6.2013, p. 1).

[19] E.g. Ricciato et al., *Towards a methodological framework for estimating present population density from mobile network operator data*, Pervasive and Mobile Computing 68, 101263, 2020. https://doi.org/10.1016/j.pmcj.2020.101263.

The implementation of the intervention can be considered as completed to the extent that all mandatory data collections have now entered a mature phase characterised by routine and robust production processes that have now been established for some years. When necessary, these processes continue to undergo mostly occasional, technical or small methodological updates[20]. This is illustrated by the generally very good compliance of national statistics providers with the legislation in force, as documented in regular implementation reports to the European Parliament and the Council for the annual data collections[21]. Eurostat monitors legal compliance regularly, and this led to some bilateral exchanges with some Member States at technical level, but outputs generally achieve a high level of compliance.

The statistical outputs being generated by the intervention have resulted in tangible benefits for statistics users. Firstly, the statistics help to inform evidence-based EU policymaking in many areas such as: (i) social and economic cohesion; (ii) structural and regional cohesion; (iii) civil rights; (iv) migration and internal affairs; (v) environment; (vi) energy; and (vii) health. Moreover, total population at national level (based on a strict application of the twelve-month definition of usual residence, reported under Article 4 of the Demography Regulation) is used to verify the population quota in qualified majority voting of the Council. Furthermore, annual demographic statistics and projections inform EU institutions to ensure the functioning of the EU. For instance, these statistics and projections contributed to the *2021 Ageing Report*[22] and are a basis for the EU's long-term economic and budgetary projections under the European Semester. They were also used for the *2020 Report on the Impact of Demographic Change*[23] addressing Article 159 TFEU (formerly Article 143 TEC). Finally, statistical outputs from this intervention are among the most widely consulted European statistics. Since 2016, international migration statistics have been the most visited of the thematic sections on the website, with strong and continuing user interest. Similarly, the periodically updated 'Statistics Explained' article on migration and migrant population statistics[24] has established itself since 2016 as one of the most frequently consulted 'Statistics Explained' pages.

However, there are two substantial developments that could not have been foreseen at the time the legal bases for the intervention were being drawn up.

The first of these developments is the rapid change in relevant policy drivers over the past decade. There has been particularly rapid change brought by: (i) demographic developments including migration and ageing; (ii) the Green Deal; (iii) fundamental rights monitoring; and (iv) the urbanisation and integration of rural areas. This created a

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[20] Again, the census domain is special due to its less frequent nature: the practice established by the Census Regulation is that each census round must be specified by dedicated implementing legislation, thus allowing a limited element of flexibility to adapt to evolving needs between census rounds.

[21] Previous reports to the European Parliament and the Council: COM(2012) 528, COM(2015) 374, COM(2018) 594, COM(2021) 489 on the implementation of the Migration Regulation; COM(2018) 843 on the implementation of the Demography Regulation.

[22] https://ec.europa.eu/info/publications/2021-ageing-report-economic-and-budgetary-projections-eu-member-states-2019-2070_en

[23] COM(2020) 241 and accompanying SWD(2021) 46.

[24] http://ec.europa.eu/eurostat/statistics-explained/index.php/Migration_and_migrant_population_statistics

situation where statistics producers, who were still implementing relatively recent obligations under the intervention, were confronted with new and quickly changing policy needs for statistics. Often these needs were out of scope of the recently enacted legal bases.

The second development is the equally rapid change in the relevant data sources, a change that was also not anticipated by the legislation. There were three aspects to this rapid change in data sources: (i) the rapid improvement in the quality and accessibility for statistical purposes of administrative sources available in an increasing number of Member States; (ii) the establishment of large-scale IT systems and interoperability platforms at EU level; and (iii) the emergence of 'big data', including privately held data sources. As a result of these two main developments, new or changed policy needs were emerging in parallel with developments in data sources and methodologies that could not be properly exploited within the legal framework.

In conclusion, the current situation is characterised by a firm legal framework that emerged from the intervention, and very good overall compliance by all Member States with this framework. This evaluation should therefore focus on the legal framework's ability not only to deliver on the initial objectives of the intervention, but also to remain relevant in a highly dynamic policy, technical and methodological context.

4. METHOD

4.1. Short description of methodology

This evaluation assessed the performance of the current legal framework on European population statistics according to six criteria: relevance (2005 situation and evolution until today), effectiveness, efficiency, coherence (internal and external), EU added value and statistical quality. To achieve this, and to answer the evaluation questions in Section 5, Eurostat assessed two broad perspectives: (i) how the statistics are produced from source to publication; and (ii) how these publications are received by the statistics users. The full evaluation framework (criteria, questions, indicators and evidence sources) is provided in Annex 4.

The initiative on redeveloping European statistics on population (ESOP)[25] was published in March 2021. It relies on a back-to back evaluation and impact assessment. The combined evaluation roadmap and inception impact assessment was publicly consulted in April 2021. Eurostat then carried out the evaluation, impact assessment and stakeholder consultation between May 2021 and February 2022 with the support of an external contractor and guidance from an interservice steering group (ISG) composed of representatives of 16 Commission Directorates-General (DG) (see Annex 1, point 2).

Eurostat identified the following evidence and corresponding sources to be used for evaluation and impact assessment:

- desk research – analysis of legal, contextual, methodological and technical background documents relevant to the intervention;

[25] https://ec.europa.eu/info/law/better-regulation/have-your-say/initiatives/12958-European-statistics-on-population-ESOP

- opinions of statistics producers – various consultation activities engaging NSIs, national holders of administrative source data used for population statistics, and EU citizens acting as census respondents;
- opinions of statistics users within the Commission – consultation activities and drawing upon Eurostat's working relations and good communication with many Commission services and in particular the Commission network of statistical correspondents;
- opinions of other users – various consultation activities, in particular the open public consultation (OPC).

A detailed account of all evidence and sources used can be found in Annex 1.5.

Eurostat then developed a consultation strategy that further refined the typology of key stakeholders as well as suitable consultation activities. The following main stakeholders were identified.

- **Data providers** comprising **administrative data providers** (public administrations and other organisations that provide or may provide source data to statistical authorities for producing European statistics) and **individual respondents** (individuals who are included in the data collection such as sample surveys and census enumerations and who provide answers to the statistical authorities collecting this data).

- **Statistics producers** are the NSIs and other national authorities collecting, processing and sending relevant statistical data to Eurostat. They ensure the quality of the data.

- Statistics users, divided into four categories set out below.

    - ***Institutional users*** are the policymakers or entities directly supporting policymaking at various administrative levels. They include EU bodies, international organisations, national ministries, government research institutes, and regional/local authorities.

    - ***Other professional users*** contribute occasionally and indirectly to the policymaking process at EU and other levels. These other users include academics, research institutes, professional organisations, advisory councils, NGOs, and individual private companies.

    - Media organisations.

    - The general public.

The stakeholder groups were then mapped onto suitable and proportionate consultation activities in a detailed consultation plan (Table 2). Eurostat carried out the expert consultations in its relevant expert groups with ESS members (the Directors of Social Statistics group, topical working groups, and a task force) and by written consultations, for instance with the Commission network of statistical correspondents. Eurostat also prepared and implemented the public consultation survey and two targeted consultation surveys partly with support from the contractor. Finally, 5 workshops and 47 in-depth interviews were organised, hosted and documented by the contractor with Eurostat inputs on the selection of appropriate participants, agenda setting and occasional interventions.

Table 2 - Mapping of stakeholder groups onto consultation activities

Activity	Public consultation	Targeted survey	Targeted workshops	Expert consultations	Interviews
Period / Stakeholder group	Q4 2021	Q4 2021		Q2-Q4 2021	Q3-Q4 2021
Administrative data providers	X				X
Individual respondents	X				
Statistics producers	X	X	X	X	X
Institutional users	X		X	X	X
Media	X		X		X
Other professional users	X		X		X
General public	X				

Due to the back-to-back evaluation and impact assessment, all consultation surveys contained both: (i) sections or elements focusing on an evaluation of the current framework (a 'backward-looking' assessment – analysed in this staff working document); and (ii) ideas for future improvement (forward-looking – analysed in the impact assessment). Analysis of the two targeted surveys was straightforward, as these mapped well onto specific user subgroups listed above, namely EU-level institutional users (targeted at the network of statistical correspondents of all Commission services) and statistics producers (targeted at the NSIs). To analyse the results of the OPC, all replies were first categorised into the key stakeholder groups listed above and then assessed in turn. The workshops were used to obtain stakeholder feedback at the start and at the end of the evaluation (addressing the problem definition – September 2021, and the problem validation – January 2022).

4.2. Limitations and robustness of findings

A broad structural limitation of the desk research was the fact that the basic legal acts under this intervention were adopted between 2007 and 2013 – at a time when the Better Regulation guidelines and ensuing need for effective monitoring and evaluation mechanisms were not in place yet. Moreover, the costs of producing statistics at Member State level were not documented in sufficient detail at that time. In particular, virtually all national production systems for population statistics were historically set up, maintained and updated to simultaneously cater to both national and EU-level statistical needs. This makes it extremely difficult for Member States to separate: (i) the baseline costs of catering to national needs; from (ii) the incremental costs incurred only to comply with the legal framework under this intervention (and costs of catering to EU-level statistical needs more generally).

Finally, the period when the legal framework was implemented in the Member States – roughly from 2007 to 2014 – coincided with another fundamental trend, namely the first

stages of the transition of many national statistical production systems from traditional data sources to an increased – or even exclusive – use of administrative data sources. This broad trend is assumed to have substantially affected costs across this period. This cost effect is likely to have been much greater than any changes in costs due to the intervention – at least in some Member States.

These limitations have made it difficult to quantify implementation costs cleanly against the hypothetical baseline (i.e. the 2005 situation augmented by the effects of Regulation (EC) No 223/2009), and thus to assess efficiency quantitatively. Therefore, related evaluation questions and indicators were designed to acknowledge this difficulty by adding additional qualitative opinion elements covered by the stakeholder consultation. Nevertheless, monetised baseline and incremental costs on Member States and on Eurostat itself by each statistical domain, are estimated from the consultation results at hand, combined with both regular Eurostat consultations on statistical production costs and UNECE publications on the costs of previous census rounds[26]. The estimation models and assumptions are described in detail in Annex 2, and findings are presented under the discussion of efficiency in Section 5.4 below.

It was not possible to quantify or estimate the monetary value of: (i) costs for data users or for individual persons; and (ii) benefits in general. This was in part due to a lack of available data, for example on the costs to citizens of participating in census rounds. More generally, this was due to certain costs and benefits being inappropriate for quantification because their effects are more ambiguous and variable across Member States and stakeholder groups. For example, the benefits to non-institutional data users from increased access to high quality European statistics on population would be challenging to quantify, since this would depend on several additional factors, such as how these data would be used or the cost of accessing data through alternative sources.

5. ANALYSIS AND ANSWERS TO THE EVALUATION QUESTIONS

This evaluation addresses all five standard criteria (relevance, effectiveness, efficiency, coherence, and EU added value) as well as statistical quality as an auxiliary criterion. Statistical quality affects the standard criteria in various ways, so that indicators contributing to the standard criteria often draw from statistical quality indicators as part of the evidence. In general, each evaluation question was assessed with at least one indicator, where indicators are either qualitative or quantitative depending on the source data available and the nature of the indicator. An overview of the complete evaluation framework in terms of criteria – questions – indicators is provided in Annex 4.

5.1. Relevance – initial situation (RI)

The need for this intervention was based on statistical requirements and constraints that existed in the baseline scenario of around 2005. However, the reference scenario has changed significantly between the baseline and today. Therefore, an evaluation of the relevance of the intervention should take at least two perspectives: performance against the baseline scenario ('initial relevance') and performance against current needs and

[26] https://unece.org/measuring-population-and-housing; https://unece.org/measuring-population-and-housing-practices-unece-countries-2000-round-censuses

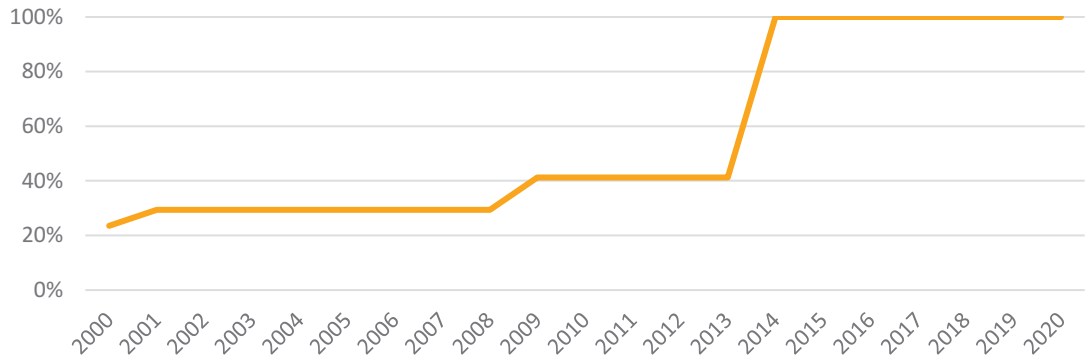

Figure 1 – Evolution of the share of initial EU use cases addressed by European datasets (indicator RI1.1) over the period of implementing the intervention. (Source: Eurostat analysis)

constraints ('evolved relevance'). This section evaluates only initial relevance, whereas evolved relevance under the reference scenario of today is evaluated in section 5.2.

***RI1** – To what extent do statistical objectives and outputs correspond to the needs for evidence-based EU policymaking?*

→ All EU institutional- and policy-related topical needs known at the baseline were addressed.

When the intervention began around 2005, several EU-level data needs in the population-statistics domain were well known and expressed by various EU bodies (footnote 1). These needs are documented in the explanatory memoranda of the Commission proposals for – as well as in the recitals of – the current legislation. As Figure 1 shows, the EU-level needs can be broadly split into policy needs (supporting EU policies) and institutional needs (emerging directly from provisions in the Treaties explicitly relevant to population statistics). Indicator RI1.1 measures if/when initial EU use cases (policy and institutional) were addressed successively by datasets that became regulated through this intervention. Figure 3 shows the time evolution of the indicator, clearly highlighting the step-by-step improvements around the years when particular base acts started to deliver data (2009 for the Migration Regulation, 2014 for the Census and Demography Regulations). The key quality gaps at the time (2005) that were addressed by this intervention were comparability, timeliness and completeness of the data across all Member States (see Section 5.8).

***RI2** – To what extent do statistical objectives and outputs serve institutional needs for the functioning of the EU?*

→ Addressing EU institutional needs for the definition and implementation of the population base leaves room for improvement. Gaps exist in statistics inputs for population projections.

There are three main institutional needs introduced in Section 2 for European population statistics: (i) monitoring of the demographic situation; (ii) national population weights for qualified majorities in the Council; and (iii) inputs to population projections needed for long-term economic planning. These needs imply certain aspects of the statistics: for instance, policy and democratic-representation considerations require a population-base definition (who is counted among the population and who is not) that reflects the actual population present. Indicator RI2.1 shows that the compromises accepted under this intervention have generally led to a regulated definition of the population base that is

overall barely sufficient in this respect. The Demography Regulation requires national population figures based on a strict base definition only for Council voting weights. These national population figures must be of the highest possible quality[27] but the factual accuracy or comparability achieved is currently not quantified, and there are indications that the strict definition is not implemented coherently in all cases (RI2.2, see EE3.1). Finally, there are gaps in statistics inputs for producing population projections that were in principle known at the time of developing the intervention, but not fully reflected in the resulting legal framework (RI2.3).

5.2. Relevance – evolution until today (RE)

***RE1** – To what extent do population statistics address current policy needs for detailed, frequent and harmonised data on population aspects, including at highest geographic granularity?*

→ *The evolution of EU policy needs since the baseline has led to significant new data gaps.*

The previous section showed that the intervention has indeed led to many highly relevant and needed datasets from a baseline perspective. However, indicators RE1.1–RE1.5 measure the gaps due to emerging policy needs that currently exist but that were not anticipated at the baseline.

Indicator	Gap type	Baseline	Target	Current	Key gap(s)
RE1.1	Detail	Good	Good	Barely sufficient	- Housing data for Green Deal - Equality data for fundamental rights policies
RE1.2	Frequency	Good	Good	Decent	- Housing data for Green Deal - Quarterly (seasonal) population for urban/rural integration
RE1.3	Timeliness	Good	Good	Decent	Legal deadline for EU census results of 27 months after the census year is too late
RE1.4	Harmonisation	Decent	Good	Barely sufficient	No harmonisation of the population-base definition at EU level
RE1.5	Geographic granularity	Good	Good	Barely sufficient	NUTS-level data, incl. on migration, functional typologies and georeferenced data for regional and urban/rural cohesion policies, and cross-border analysis

[27] A qualified majority in accordance with Article 16(4) TEU requires at least 15 Council votes representing at least 65% of the EU's population, where some (rare) combinations of Member States can lead to results that are extremely close to the population threshold. For instance, AT, BE, BG, CY, DE, ES, HR, HU, IE, IT, LT, LU, LV, PL and PT (15 MS) would represent 65.000032% of the Union population based on 2021 data.

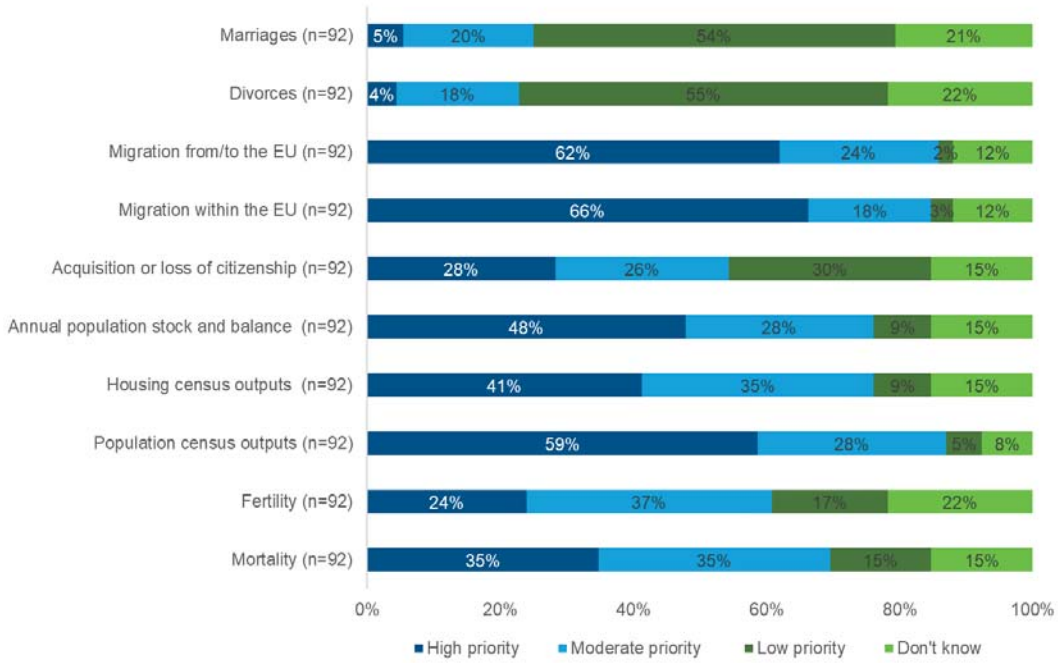

Figure 2 – Opinions of OPC respondents on which dataset topics they consider a priority to be improved by 2030. (Source: ICF analysis of OPC responses)

In summary, the evolution of the policy environment over time has led to significant gaps that did not exist at the time of the baseline, most notably in the detail of characteristics, harmonisation, and the geographic granularity of the statistics.

***RE2** – To what extent are established statistical objectives fit to respond to evolving policy needs?*

→ *RE1 identified a significant increase in gaps over time. Statistics users across all groups do not find that the statistics adapt quickly to new needs.*

The previous question identified several key gaps that emerged after the intervention was implemented. According to indicator RE2.1, the current legal framework is now barely sufficient to address these gaps, essentially because it provides almost no flexibility mechanisms (e.g. only very few details can be changed by delegated powers). This is substantiated by the OPC results, where most respondents across all stakeholder groups except statistics producers agreed only 'somewhat' that the legislation is fit for purpose. The inability of the legal framework to adapt is also illustrated in the clear opinion of statistics users that the statistics cannot adapt quickly to new needs. Only a minority of OPC respondents across all stakeholder groups (except statistics producers) agreed that the statistics adapt quickly to new needs. The share of disagreement was most pronounced among the professional and institutional users. Moreover, opinions on the ad hoc data collections initiated outside the legal framework in response to COVID-19 seem to indicate that such voluntary ad hoc measures may not be sufficient to meet the needs experienced in a rapidly changing crisis.

Finally, after the 2011 census, Eurostat and the NSIs concluded there was a substantial need for a complete collection of key 2021 census data on a common European 1 km^2 grid. However, this could not be regulated under the Census Regulation due to its lack of

flexibility. Therefore, the Commission had to proceed with an ad hoc act under a different legal base to ensure EU completeness and comparability[28].

RE3 *– Who are the main current users of European statistics on population and to what extent do the currently available European statistics on population meet their needs?*

→ A variety of user groups other than EU institutional users is identified. These groups are generally somewhat more satisfied with the current statistics, but raise the same main topics for improvement as RE1.

RE1 focused on the needs of EU-level institutional users representing the most influential user group of European statistics. However, in addition to institutional users at other governance levels, the stakeholder consultation also addressed other relevant user groups in line with the expectations of the consultation strategy. These other relevant user groups most notably include NGOs active in the relevant policy areas and academic/research institutions. The views of these user groups are captured by the OPC, workshops and interviews.

The consultations of these more diverse groups found that they are generally somewhat more satisfied that their data needs are being met than EU-level institutional users. However, these more diverse groups have also identified areas for improvement that are in line with the findings of RE1, namely: (i) the timeliness of statistics; (ii) the availability of data on subgroups at risk of inequality and non-discrimination (such as LGBTI groups and ethnic minorities); (iii) the availability of data on EU internal and external migration; and (iv) access issues (such as the utility of metadata and other user-friendliness concerns). This is also reflected in Figure 4, which shows OPC priorities for dataset topics to be improved by 2030. Thus, changes in the needs of statistics users often reflect major societal changes such as migration, gender issues and social norms[29].

5.3. Effectiveness (EE)

EE1 *– To what extent is the output of high quality?*

→ Several quality aspects have improved significantly, especially for statistics that were included in the three new Regulations. Key gaps remain in: (i) availability of statistics when data transmission is voluntary; and (ii) comparability of statistics due to insufficient harmonisation.

At the time of the baseline around 2005, all relevant statistics were produced on a voluntary basis. This led to significant gaps in the statistical-quality dimensions of comparability, timeliness and completeness at EU level – i.e. data were not available for all Member States, or were only available after considerable delay. It also meant that some statistical categories were not fully comparable. Therefore, improvement on these quality aspects is a criterion for measuring the effectiveness of the intervention. Findings from indicators on respective quality dimensions are summarised in the table below.

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[28] Commission Implementing Regulation (EU) 2018/1799 of 21 November 2018 on the establishment of a temporary direct statistical action for the dissemination of selected topics of the 2021 population and housing census geocoded to a 1 km^2 grid (Text with EEA relevance) (OJ L 296, 22.11.2018, p. 19).

[29] ICF Final Report supporting ESOP evaluation (2022), Section 4.1.

Quality dim.	Ind.	Definition	Baseline	Target	Current
Coherence	SQ1.3	Percentage of ESS members with coherent annual population totals across datasets	72% (2005)	100%	100% (from 2014 on)
Coherence	SQ1.5	Percentage of ESS members with coherence between annual population stocks and demographic changes	44% (2004-2012 av.)	100%	43% (2013-2019 av.)
Comparability	SQ2.2	Percentage of consistent bilateral migration flows between ESS members (<20% difference)	25% (2005)	100%	25% (2019)
Comparability	SQ2.3	Relative asymmetry of total intra-EU migration (% of total immigration)	13.8% (2008)	0%	3.7% (2019)
Timeliness	SQ4.1	Largest delay of EU complete annual population data compared to reference date	552 days (2007-2012)	≤ 552 days	397 days (2013-2019)
Punctuality	SQ5.1	Largest delay compared to agreed deadline among ESS members	294 days (2007-2012)	0 days	31 days (2013-2019)
Completeness	SQ6.1	Percentage of mandatory statistics published with EU-level completeness	42.6% (2000-2006 av.)	100%	98.9% (2013-2019 av.)
Completeness	SQ6.2	Percentage of voluntary statistics published with EU-level completeness	41.2% (2000-2006 av.)	100%	58.4% (2013-2019 av.)

This shows that coherence (SQ1.3), comparability (SQ2.3), timeliness (SQ4.1)[30], and completeness (SQ6.1) have all improved significantly for data that became mandatory with the intervention. However, the quality aspects of voluntary data have not improved at the same rate (SQ2.2, SQ6.2), which was to be expected given the baseline experience. This is very much in line with the general opinion of respondents to the public consultation, who largely agreed (more than 75% agreed in each stakeholder group) that the current statistics are of high quality overall. There was also widespread agreement that the voluntary parts should be subject to a regulation in the future (more than 75% in each stakeholder group agreed except for the statistics producers). Finally, the lack of improvement on indicator SQ1.5 – despite underlying mandatory data – is a direct consequence of the harmonisation gap identified in question RI2 that persists even after the intervention.

EE2 *– To what extent do statistics published under the intervention serve EU policymaking?*

[30] Note an intricacy: the delay in receiving complete EU data compared to the reference date (timeliness, SQ4.1) did not improve at the same rate as the compliance with agreed deadlines (punctuality, SQ5.1). This is because Member States only agreed to commit to a longer formal deadline (12 months instead of 8.5 months) when the deadline was included in the Demography Regulation. This highlights typical trade-offs between quality dimensions (here completeness vs timeliness) that become explicit when the statistics are made subject to a regulation.

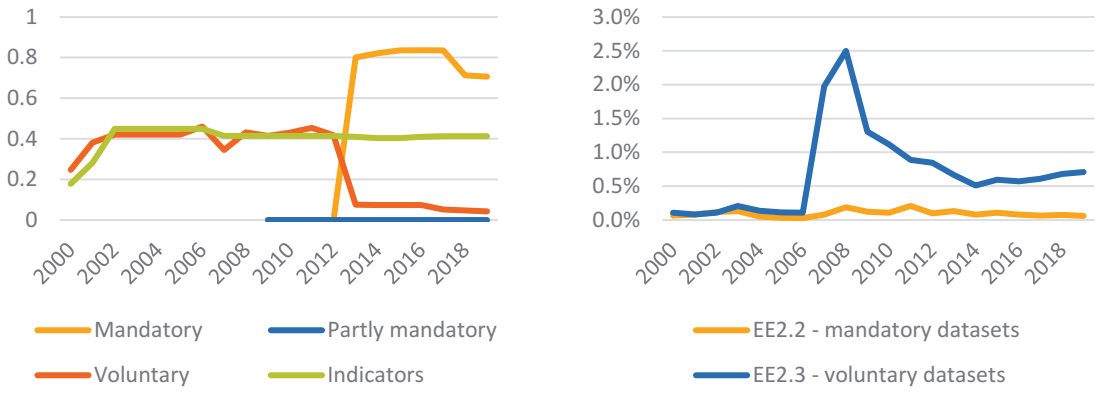

Figure 3 – Left: average completeness of EU aggregates in annual datasets, by collection base and reference year (EE2.1). Right: average share of population categorised as 'unknown', over all variables where this category exists and over all Member States (EE2.2 mandatory, EE2.3 voluntary datasets). (Source: Eurostat analysis of Eurobase datasets)

→ The availability of EU aggregates and complete coverage of the EU population and its demographic characteristics have generally improved, leading to improved evidence for EU policymaking.

A key element of data utility for policy-making at EU level – and thus effectiveness of this intervention – is the availability of EU aggregates. To make EU aggregates available, the data need to be complete across all Member States and a dedicated aggregate category must be created in the geographic breakdowns – e.g. 'EU28 (2013-2020)'. The left-hand side of Figure 5 shows the average completeness of EU aggregates in annual[31] datasets, illustrating two trends. First, the Migration Regulation introduced various mandatory or partly mandatory datasets from 2009, but without including clear approaches to aggregate migration data coming from NSIs to EU level. Second, the Demography Regulation introduced mandatory datasets and required EU aggregates to be calculated (a significant improvement can be seen from 2013).

Another key element for policymaking at all levels is the comprehensive coverage of the population under the required characteristics. The presence of 'unknown' categories reduces this comprehensive coverage for the affected variables. The right-hand side of Figure 5 shows the average percentage of the population with an 'unknown' characteristic across all affected variables and Member States in the annual data. Again, there is a clear performance difference between the mandatory and voluntary datasets. In particular, legislation to implement the Demography Regulation[32] capped the population percentage reported as 'unknown' to at most 5% of the total population in the mandatory data. The sharp increase in the voluntary data around 2009 comes from the introduction of a variable on education that was initially reported as 'unknown' to a significant extent.

***EE3** – To what extent do statistics published under the intervention serve institutional needs for the functioning of the EU?*

[31] The 2011 census datasets are not included here explicitly because no EU aggregates were calculated, so the indicator is trivially 0.

[32] Commission Implementing Regulation (EU) No 205/2014 of 4 March 2014 laying down uniformed conditions for the implementation of Regulation (EU) No 1260/2013 of the European Parliament and the Council on European demographic statistics, as regards breakdowns of data, deadlines and data revisions (Text with EEA relevance) (OJ L 65, 5.3.2014, p. 10).

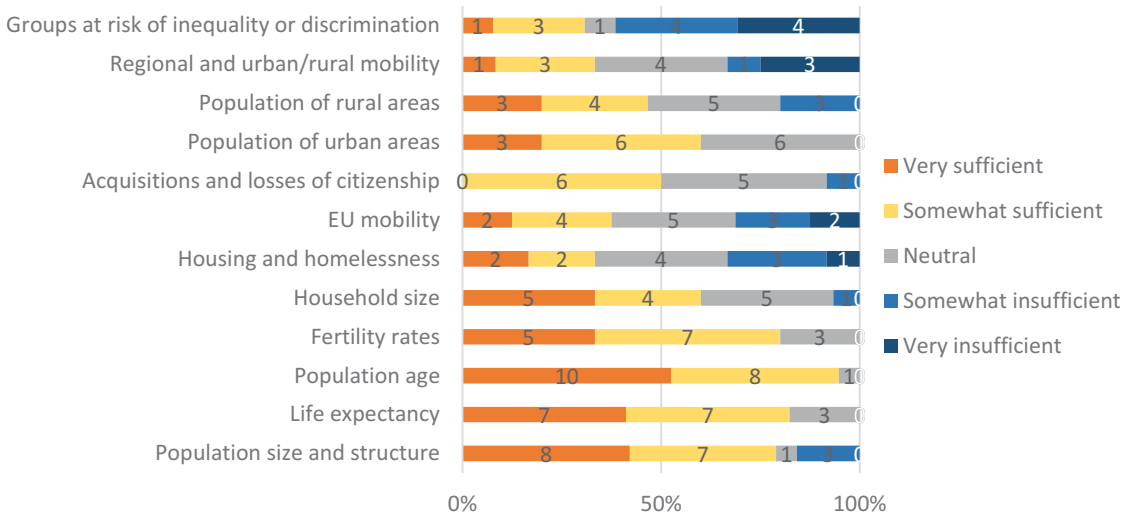

Figure 4 – Institutional users' views according to the OPC on sufficiency of current data by societal change topic. (Source: Eurostat analysis of OPC responses)

→ *There are indications that population figures for Council voting weights can be made more coherent for all Member States. Although core topics for demographic monitoring are covered well, data gaps have opened up on emerging topics of demographic and societal change.*

As discussed under question RI2 (Section 5.1), the quality – and in particular the accuracy – of total population figures corresponding to a strict common definition of the population base (usual residence based on 12 months stay) is central to the effectiveness of these data to establish reliable Council voting weights. Indicator RI2.2 already established that there is insufficient information available on accuracy. Therefore EE3.1 analyses the coherence in implementation of the strict definition across Member States and thus the emerging comparability of these figures at EU level. The information available on national situations indicates that 22 Member States applied the definition coherently in 2022, up from 17 Member States when this data collection started in 2014. Some progress has therefore been made and this has led to decent EU-level comparability of these figures at present, even though a major gap remains due to a lack of information on accuracy.

The appropriateness of the statistics for monitoring the demographic situation is another factor in the effectiveness of statistics for institutional purposes. A 'soft' indication of its performance in this respect can be seen in the opinions gathered in the OPC on whether various elements of demographic and societal change are sufficiently covered by the current statistics (EE3.2). Figure 6 shows several topics where only a minority of the respondents from the institutional user group found the currently published statistics to be sufficient. These topics are equality (only 31% of respondents found the statistics sufficient), housing (33%), urban/rural mobility (33%), intra-EU migration (38%) and rural population (47%). These responses are in line with the targeted consultation with Commission statistical correspondents, who said that the key policy topics suffering from insufficient data were: the Green Deal (housing data), urban/rural integration (functional typologies and seasonal data) and fundamental rights policies (equality data). Among all other professional users – including researchers – the picture is even more distinct, with even smaller shares than institutional users saying there was sufficient data on equality

(14%), housing (21%), urban/rural mobility (28%), intra-EU migration (37%) and rural population (42%). The other professional users were also mostly dissatisfied with the data on acquisitions or losses of citizenship (only 30% were satisfied) and urban population (41%).

EE4 *– What are the existing cooperation arrangements between NSIs and national authorities in charge of administrative data sources that are used for population statistics? How effective are those arrangements?*

→ *Cooperation arrangements between NSIs and national authorities are largely effective, although stakeholders identified clear room for further improvement.*

The targeted NSI survey asked about the existence of legislative or other formal arrangements for cooperation between the NSI and the national authorities in charge of relevant administrative sources. In their responses, NSIs pointed to written agreements with the data owners (79% of NSIs said they had such agreements in place for all or most relevant sources), followed by effective coordination mechanisms in place (59%). Over a third of participating NSIs indicated that they are informed in advance of changes to administrative data sources for all or for the most relevant sources (34%), and 28% said they were consulted on designs or changes to administrative data sources. These results tend to match the results from the case-study interviews, indicating that NSIs have a series of coordination mechanisms that can be activated for different types of sources. Nonetheless, the workshops showed a continuous discussion on the difficulties that NSIs face in accessing data.

In the NSI survey, NSIs were also asked how often they faced difficulties in cooperating with data owners. Most NSIs (66%) said they rarely face difficulties. Less than a quarter said they faced issues always or sometimes (24%), while 10% said they never face issues. When asked about main limitations/restrictions in the cooperation agreements, the main issues raised by the NSIs were excessive formality or bureaucracy. The NSIs also said that delays in sending data were generally a rare occurrence, and outright refusal to send data was either rare or did not happen. Nevertheless, most NSIs (68%) agreed that there was room to improve cooperation between NSIs and national authorities, while 21% disagreed.

Findings from the case studies indicate that, overall, the current agreements seem to be sufficient to gather the required data, but not sufficient for gathering data on areas of emerging interest. Although the situation may vary between countries, these results seem to follow a general trend, namely that serious problems with data access only seem to affect specific sectors.

5.4. Efficiency (EI)

EI1 *– To what extent is the output compliant with legal requirements?*

→ *Only occasional issues were followed up on and no infringement cases were launched. The current legal base consisting of three separate acts leads to administrative inefficiencies (REFIT relevance).*

Since the adoption of the three base acts, Eurostat has monitored the legal compliance of Member States with mandatory statistical requirements as a part of its implementation efforts, but being somewhat less strict during the transitional periods after new obligations entered into force. Overall, Eurostat only identified occasional issues in compliance over the years, and these issues were followed up at expert level to improve

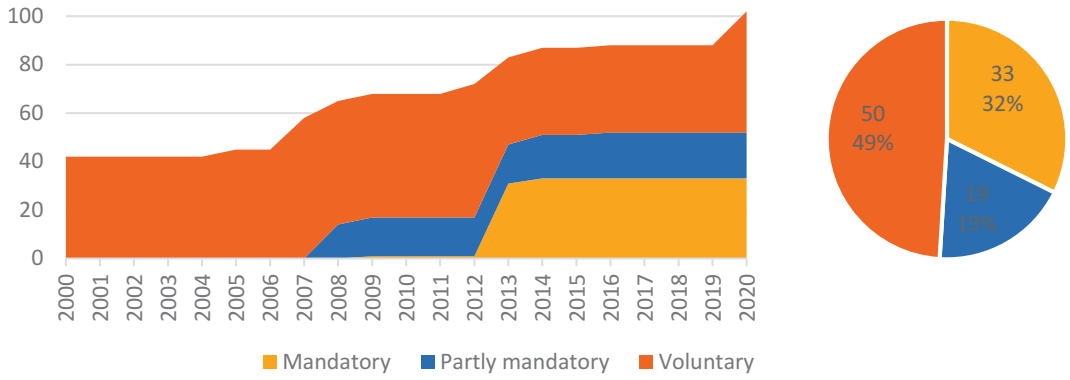

Figure 5 – Number of annual and infra-annual datasets by release year (left) and for 2020 only (right), and split by collection base (EI2.1). (Source: Eurostat analysis)

compliance gradually. Eurostat monitored and addressed compliance, and did not have to launch any infringement procedures in the process (EI1.1).

Another issue relevant to efficiency is the fact that the current legal framework consists of three separate legal acts that Member States need to be comply with and that Eurostat needs to enforce and monitor. Apart from trailing internal incoherence (Section 5.5), this is assumed to cause at least some redundant administrative procedures, creating opportunities for REFIT simplifications.

***EI2** – To what extent are voluntary data collections required to cover statistical needs?*

→ *The intervention was efficient in regulating a large part of the statistics addressing key needs. Nevertheless, there is room for further efficiency gains due to the existence of many currently voluntary datasets that are highly complete (REFIT relevance).*

Voluntary data collections are generally less efficient at EU level, because not all Member States invest the same resources in providing these data. This means that most of the EU-level value added is lost because these data are then not complete, timely and/or comparable enough. Often, a relatively small incremental investment in completing the data, i.e. by regulating them and supporting implementation financially, can lead to significant increase in value added. Therefore the share of data needs covered by voluntary collections (EI2.1) is a proxy indicator for the efficiency of the intervention.

Figure 7 shows the evolution over time of the numbers of mandatory, partly mandatory, and voluntary datasets published. Three changes are obvious from this figure. The first change is the introduction of mostly partly-mandatory datasets by the Migration Regulation from 2008 on. The second change is the conversion of voluntary datasets to mandatory datasets, and the addition of new voluntary datasets in the wake of the Demography Regulation from 2014 on. The third change is the sharp increase in voluntary datasets from 2020 responding to urgent needs related to COVID-19. Thus in 2020, almost half of the annual and infra-annual datasets published in the ESOP domains are voluntary, and only a third of all datasets are fully regulated by EU legislation. This indicates room for efficiency gains, also in a REFIT context, especially by regulating voluntary datasets that are already now highly complete.

***EI3** – How often are mandatory vs voluntary datasets accessed by users?*

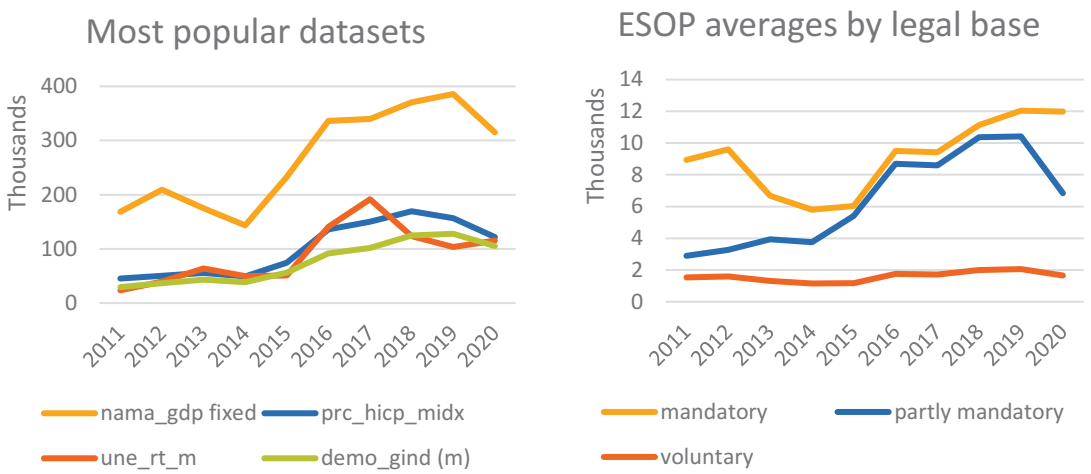

Figure 6 – The left-hand chart shows accesses per year to some of the most popular Eurostat datasets, namely on: annual GDP (nama_gdp_fixed); consumer prices (prc_hicp_midx); monthly unemployment (une_rt_m); and the demographic balance within ESOP scope (demo_gind). The right-hand chart shows average accesses to datasets per year by legal base. (Source: Eurostat analysis of monthly Eurobase access analytics)

→ *In line with the general trend, the number of queries of population statistics has roughly doubled over the past decade for most domains. Mandatory datasets are significantly more popular than voluntary ones.*

OPC respondents from almost all stakeholder groups use the Eurostat website or database to consult statistics on the European population. The only group with a significant minority (41%) that did not know about these resources were the individual respondents to statistical survey questionnaires (i.e. non-regular users).

On access to annual data through Eurobase[33] (EI3.1), Figure 8 (left-hand chart) shows that the numbers accessing the most popular demographic dataset (demo_gind – demographic balance) have increased significantly over the past decade (from less than 50 000 per year until 2014 to more than 100 000 per year since 2018). However, this increase in interest is not unique to population statistics and therefore cannot be attributed to an isolated effect of the intervention. For example, popular Eurostat datasets across other domains (e.g. GDP, the consumer price index, and unemployment) have also seen an increase in popularity, roughly doubling access numbers over the past decade. The right-hand side of Figure 8 confirms that the partly or fully regulated datasets under this intervention are also significantly more popular on average than the datasets that remained voluntary.

On access to 2011 EU census output through the Census Hub[34] (EI3.1), Eurostat did not produce regular analytics. An ad hoc extraction was only possible from 2017 onwards, so there are no data for the period most likely to have seen the most user interest, i.e. during the period after initial publication in 2014. Nevertheless, the website analytics for 2017-2021 show that 2011 EU census outputs are still just as popular as annual data, with more than 160 000 queries per year for the most popular dataset (hypercube 55 – population by NUTS 3 region, sex and single year of age). And on average, there are almost 8 000

[33] https://ec.europa.eu/eurostat/data/database

[34] https://ec.europa.eu/CensusHub2

queries per year and per hypercube on population (more than 6 300 queries on housing, 2 100 on families and fewer than 1 000 on households). This also shows that census outputs on housing are almost as popular as outputs on population.

EI4 *– How efficient are existing cooperation arrangements between NSIs and national authorities in charge of administrative data sources used for population statistics?*

→ *Even though cooperation arrangements are widespread, NSIs attribute efficiency losses mainly to the insufficient willingness of source owners to communicate and involve NSIs in the design of – or changes to – these sources. Good and close coordination seems a key factor.*

EE4 revealed a problem: although there are already formal, effective cooperation arrangements between NSIs and national authorities, the role of most NSIs is more limited in decision-making or change processes related to the relevant administrative sources. For instance, 66% of respondents to the targeted NSI survey noted that they were informed in advance of changes to administrative sources only for some or none of the relevant sources. And 72% of respondents to the targeted NSI survey said they were consulted on the design of – or changes to – only some or none of the relevant sources. Therefore, despite formalised – and to some extent efficient – cooperation mechanisms, some NSIs experience insufficient communication or involvement in key decisions made by national authorities. This may lead to inefficiencies, as substantiated by feedback from interviews, where views on cooperation arrangements varied greatly across Member States.

Some of the key challenges and drivers of inefficiencies in these cooperation arrangements are set out in the bullet points below[35].

- The NSI is rarely involved in making decisions on data structure and quality-related issues, including when designing or modifying administrative databases.
- There is often a lack of established cooperation mechanisms between NSIs and data owners.
- Data owners are often not willing to consider recommendations or requests from NSIs, and NSIs often lack the authority to request changes.
- Excessive bureaucracy and delays often occur in the delivery of data, particularly sensitive or protected data.
- In some cases, NSIs reported that data owners misinterpreted national law and refused to provide access to data and/or requested payments from NSIs for the data.
- NSIs that reported strong collaboration arrangements attributed this to the existence of established coordination mechanisms, including written agreements covering each instance of data provision with data owners.

When asked to identify areas of cooperation that required improvement to achieve cost savings in the production of population statistics, NSIs identified the following key areas: (i) the quality of data; (ii) staff availability; and (iii) communication between NSIs and national authorities. A substantial proportion of NSIs (48%) were unable to provide a response when asked for suggested improvements to cooperative arrangements to ensure European statistics on population are able to meet user needs. Those NSIs that did

[35] Eurostat (2018) Analysis of the legal and institutional environment in the EU Member States and EFTA Countries, admin-wp1.1_analysis_legal_institutional_environment_final.pdf (europa.eu).

Table 3 – Overview of costs to MS/NSIs and Eurostat associated with the current legal framework, of which incremental costs broken down by legal base. (Source: ICF estimates of baseline and incremental costs to NSIs/Member States and Eurostat)

Overview of costs identified in the evaluation (harmonised 2021 prices in million EUR)				
	NSI/Member State Administrations		Eurostat	
	One-off	Recurring (average annual)	One-off	Recurring (average annual)
Baseline	**-**	**270.2**	**-**	**0.2**
Additional costs of the current framework – of which	**4.0**	**57.9**	**1.2**	**1.1**
– Census	-	45.5	0.08	0.71
– Demography	3.88	8.6	0.10	0.17
– Migration	0.15	3.8	1.00	0.22

respond gave suggestions relating mainly to data access, data sharing, and the frequency of data sharing.

EI5 *– What costs do data producers currently face when developing European statistics on population?*

→ The costs of the intervention are mainly borne by Member States' administrations and Eurostat. Due to implementation of the intervention, the recurring baseline costs for statistical production have increased by roughly 20% for Member States and by roughly a factor of 5 for Eurostat, with the census accounting for the biggest share, although this depends greatly on the census method adopted by the Member State (register-based, traditional or combined).

The analysis by the contractor[36] suggests that, overall, the main costs associated with the development of European statistics on population have been borne by: (i) NSIs/Member States; (ii) Eurostat; and (iii) to some extent the general population. However, it was not possible to quantify these costs and therefore they are not discussed in detail in this analysis. The greatest costs were incurred by Member States and their NSIs. The types of costs included in the cost analysis conducted as part of this study are detailed in Annex 2. These are set out in the two bullet points below.

- **Costs to Eurostat**: regulatory costs (for preparing/communicating the legislation and providing financial support), enforcement costs (or costs relating to monitoring compliance with the legislation and publishing data) and IT costs.
- **Costs to NSIs or Member States**: compliance costs (relating to monitoring and ensuring compliance with the legislation), administrative costs (to design and implement procedures to collect/distribute data, as well as to train staff), enforcement costs (covering costs required to monitor and report on data provided e.g. in terms of data quality etc.) and IT costs.

As set out in Table 3, the analysis of costs developed as part of this evaluation generated an indicative estimate of the incremental costs to NSIs/Member States and to Eurostat

[36] ICF Final Report supporting ESOP evaluation (2022), Section 4.2.2.

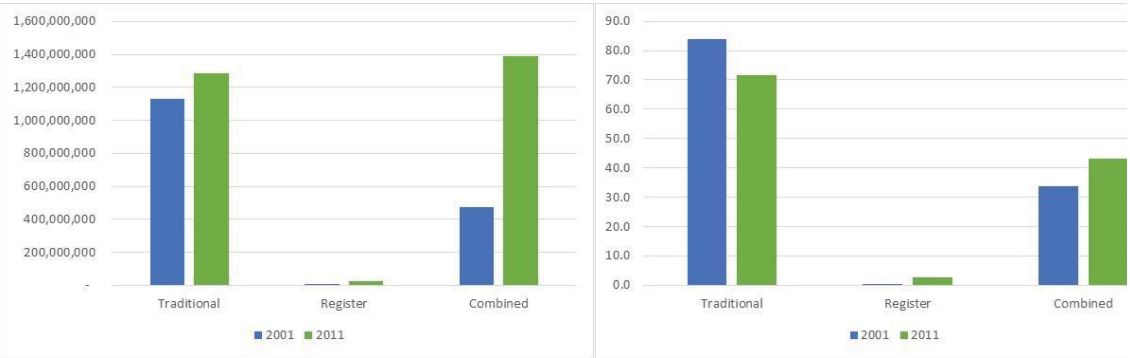

Figure 7 – Total and total per capita costs of delivering the 2001 and 2011 census, by census or method. (Source: ICF analysis of UNECE data)

associated with the current regulatory framework. This indicative estimate is relative to the baseline scenario before the implementation of the Census, Migration and Demography Regulations. Table 3 sets out the sum of costs associated with all three Regulations. Overall, additional costs to all Member States and their NSIs are estimated to be around EUR 58 million on average every year (an average of 2.2 million per Member State), with an additional EUR 4 million in one-off set-up costs. This suggests that costs to Member States increased relatively little (by around 20%), adding to the existing baseline cost of EUR 270 million. For Eurostat, incremental costs are estimated at EUR 1.1 million on average every year, with a EUR 1.2 million additional one-off cost. These estimates suggest that, relative to the baseline, costs to Eurostat more than quadrupled, in line with its increased legislative responsibilities.

Table 3 also shows a breakdown of the incremental costs associated with each individual piece of legislation, relative to the baseline. This shows that delivery of annual demography statistics are more costly to NSIs/Member States than delivery of migration statistics. However, costs related to census statistics are considerably higher for both NSIs and Eurostat than those related to the production of annual demography or migration statistics. As shown in Figure 9, the overall and per capita costs vary greatly depending on the census method. For example, the costs associated with a register-based method – becoming more and more common across Member States – are much lower than for a traditional or combined census method. This is substantiated by findings from the NSI survey, where 12 out of 31 respondents suggested that the use of administrative sources would help improve the cost and organisational efficiency with which statistics are produced.

Generally, the key cost drivers for producing European statistics on population under the current legislative framework include the cost of staff, IT equipment and assuring data quality. Feedback from the NSI survey suggests that the main drivers of costs are staff and IT: 16 out of 30 respondents to the survey said these were the key cost drivers. Other drivers suggested by respondents included the quality of data, changing variables, and data collection.

***EI6** – What benefits do data users currently get from European statistics on population (i.e. baseline benefits)?*

→ The existing legal framework improved key gaps from the 2000s. This led to various benefits that were identified and valued by all stakeholder groups, most notably improved comparability across Member States and better evidence for decision-making.

This evaluation has shown that the existing legal framework succeeded in improving key policy gaps from the 2000s by improving data availability (RI1) and quality (SQ1-6). This helped to add significant value at EU level (EU1-5). According to the analysis by the contractor[37], this generated the key benefits set out in the bullet points below (see full list in Annex 2).

- **Benefits to the general public**: improved access to data and evidence, more accurate media reporting, increased awareness of population data, and greater engagement with the data-gathering process. In the longer term, the improved statistics will bring benefits associated with improved policymaking at the EU and Member-State level.
- **Benefits to NSIs/Member States**: increased access to higher quality and more timely data. Staff are more skilled in – and have greater ownership over – the data-collection process. NSIs and Member States are better able to collaborate with data owners and meet user needs. In the longer term, the improved statistics will bring economic and social benefits related to better understanding of population data and associated improvements in policymaking.
- **Benefits to Eurostat**: reductions in administrative burden associated with the coordination and interpretation of data provided voluntarily. Eurostat also benefits from an improved reputation and is better able to meet user needs and evolving policy needs.
- **Benefits to the EU more widely**: increased access to high-quality, timely, reliable and detailed statistics to feed into decision-making. This includes being better able to make informed policy decisions which in turn improves the EU's reputation.
- **Benefits to non-institutional data users**: increased access to high-quality, comparable, reliable, timely and detailed statistics. This leads to non-institutional data users being better able to produce detailed research and comparative analyses across Member States.

Given the nature of the types of benefits identified, it was not possible or appropriate to quantify these. However, according to feedback from the interviews conducted, NSI survey, OPC and documents reviewed, overall the main benefits are centred around the legislative framework's ability to enable access to high quality data to support the development of evidence-based policy while reducing or minimising costs for data users.

Figure 10 makes this point more clearly. It shows the views of OPC respondents on the various benefits brought by the intervention, with many respondents agreeing that the intervention helped comparability across Member States (77% agreed), better decision-making (68%) and enhanced quality of products and services (66%). These findings were corroborated by feedback from the NSI survey, where 20 out of the 33 respondents saw the availability and comparability of European data as the main benefit of the intervention. A further 7 respondents said that the main benefit of the intervention was that the needs of data users were now being met. Stakeholders who were interviewed also said they valued Eurostat's role in providing guidance, press releases and news based on European data; checking and validating data; and providing assurances around the comparability and reliability of data.

[37] ICF Final Report supporting ESOP evaluation (2022), Section 4.2.3.

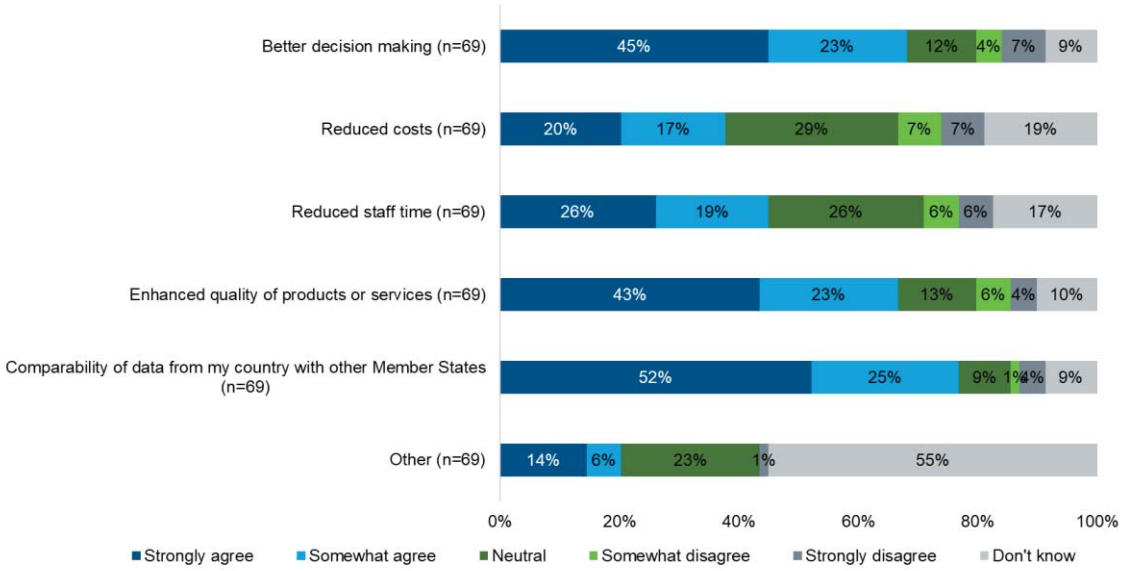

Figure 8 – OPC respondents' level of agreement to benefits generated by the intervention. (Source: ICF analysis of responses provided to the OPC)

5.5. Coherence – internal (CI)

CI1 *– To what extent do the legal bases cover statistical objectives through mandatory data collections?*

→ The intervention initially managed to regulate many datasets serving policy needs, thus reducing users' dependence on voluntary datasets. However, dependence on voluntary datasets increased once more due to the need for specific data addressing the COVID-19 pandemic from 2020 onwards.

An EU framework that is designed from the outset to put current and evolving data needs on a regulatory base – at least to a proportionate extent and in the medium or long term – can be considered more internally coherent than one that does not achieve this. From that perspective, the Census Regulation was internally coherent by enabling delegated mechanisms to regulate the entire content (within the scope defined in the base act) before each census round. Similarly, the Demography Regulation managed to reduce the number of voluntary datasets by 35% from 2014 on (CI1.1), although it remained necessary to collect voluntary input data (regional or other breakdowns) for regional population projections and ad hoc policy requests. The renewed sharp increase in voluntary datasets in 2020 (up by 39% from 2019 in response to the needs created by the COVID-19 crisis) is not a problem in itself. Rather it is the lack of flexibility of the legal framework to regulate some of these datasets in the medium or long term that reduces internal coherence.

CI2 *– Is the current legal framework internally coherent?*

→ The legal framework is generally internally coherent and the various legal acts operate well together in achieving their objectives. Some internal inconsistencies remain around the weak and non-harmonised provisions on population-base definitions across legal acts.

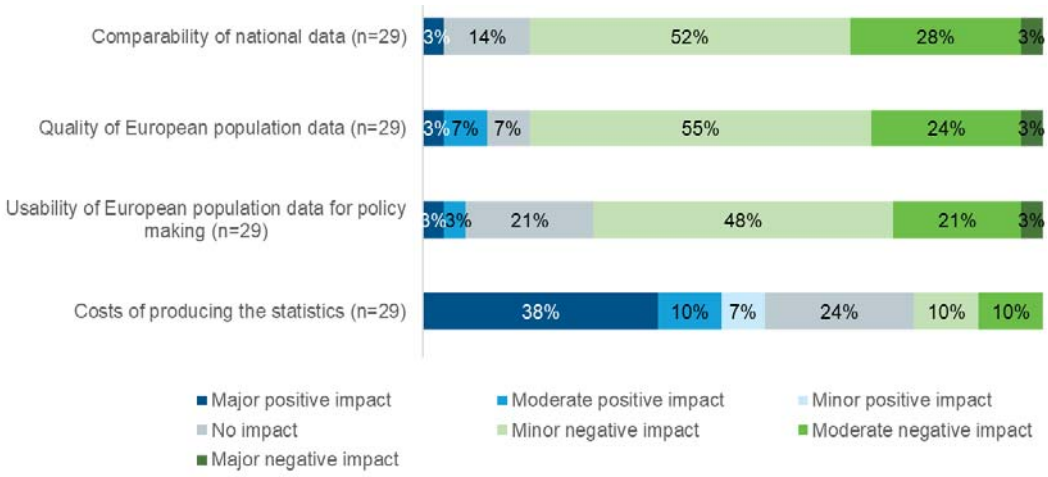

Figure 9 – NSI survey respondents' views on the impact of maintaining different national population-base definitions. (Source: ICF analysis of NSI survey results)

According to the contractor's analysis[38], the legal framework governing European population statistics is generally internally coherent overall. The various legal instruments covering population data collections also operate well together in achieving their general and specific objectives. However, certain issues have been identified with insufficiently consistent statistics, such as in the area of migration statistics or other statistics on population collected by Member States based on different definitions. These issues could be caused by inconsistencies in the existing legal framework. Eurostat currently undertakes several separate collections of population data with different periodicities and under different legal bases. Given that these statistics are currently based on several legal acts that were not designed jointly, definitions and disaggregations of data were not developed together. This has resulted in sub-optimal internal coherence.

The analysis of the legal framework shows that there are no major legislative gaps, but rather a series of inconsistencies that could be improved under a further harmonised EU legal framework governing population statistics. Such inconsistencies mainly stem from legal provisions that are not internally fully coherent. These legal provisions grant Member States certain flexibility in defining their population base for different datasets[39]. Figure 11 shows that, when keeping the flexibility to choose national population-base definitions, Member States accept a trade-off between negative impacts at EU level and the main positive impact of cutting production costs. Other significant reasons for maintaining national definitions given by most NSI survey respondents include constraints in available data sources (66% cited this as a reason), existing national legal frameworks (58%), and historical context (55%).

One final inconsistency is that the current legal framework endorses a variety of data sources (including administrative sources) to be used for statistical production. However,

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38 ICF Final Report supporting ESOP evaluation (2022), Section 4.3.1.

39 For example, Article 2(b)-2(c) of the Migration Regulation requires international migration flows to be based on a strict twelve-month rule for all Member States (in-domain harmonisation across countries). However, Article 9(5) of the Demography Regulation requires population stock data by demographic and migrant characteristics to be based on the same national population-base definition of the reporting country (in-country harmonisation across domains). This leads to persistent inconsistencies in the demographic balances of several Member States (see SQ1, Section 5.8).

the current legal framework lacks strong sectoral provisions to enable producers of official population statistics (mainly NSIs) to process relevant sources for statistical purposes. As a result, the reuse of administrative data is not fully embraced or operationalised for all relevant sources available across various Member States. Nevertheless, question EI4 (section 5.4) has established that gaps in practical cooperation with data owners are typically more relevant than a lack of enabling legal provisions. Moreover, according to an earlier Eurostat study (footnote 35), data-protection restrictions stipulated in legal acts governing specific data sources are another main factor that lead to conflicts with NSIs' legal right to access these sources. This means that additional legal acts must often be passed to allow NSIs to access these specific data sources.

5.6. Coherence – external (CE)

CE1 *– To what extent are population statistics coherent with related or depending other European statistics?*

→ The coherence of population statistics with related or depending other European statistics is satisfactory. The intervention led to improved coherence with managed-migration and national accounts data.

An important element in the intervention's external coherence is the level of statistical coherence of the data it produces with related statistics produced outside the intervention. Most relevant information overlaps in this respect are in the domains of: (i) asylum and managed-migration statistics; (ii) social surveys based on samples; (iii) national accounts statistics; and (iv) health statistics. Some findings from respective indicators are summarised below.

- CE1.1 – Coherence of data on immigrants (flows and stocks) with data on residence permits issued (from asylum and managed-migration statistics): despite a general rough correlation between these data, large discrepancies (up to >100%) and large variations between ESS members (smallest around 2%) are observed. The most significant reasons for these discrepancies were identified, and several NSIs are trying to quantify their difference components (accounting scheme, work in progress).
- CE1.2 – Censuses used as a sampling frame for other social surveys: the use of census results in this respect has decreased between the baseline and 2017 (post-intervention). Nevertheless, the census remains important for this purpose in about half of the ESS members. This reduced role of the census is likely a consequence of the general transition towards register-based production systems (two thirds of ESS members mainly use administrative sources for sampling frames).
- CE1.3 – Census and annual demographic statistics used for national accounts: census results continue to play a prominent role in the compilation of national accounts, especially housing data. Demography statistics are not used in national accounts – instead separate data are produced within the national accounts domain[40] that lead to the question of coherence (next point).

[40] Total population (national concept) published in national accounts annually (nama_10_pe) and quarterly (namq_10_pe); it could not be evaluated to what extent NSIs use population statistics as an input to produce these datasets.

- CE1.4 – Coherence of annual population counts with respective national accounts data: average total population during a reference year is an indicator in the ESOP dataset demo_gind, but is also produced independently in the national accounts dataset nama_10_pe. The average absolute deviation between these indicators across Member States is stable at below 0.2% for the entire period since 2005. The largest absolute values are consistently below 2% and there are no notable trends or effects from this intervention. Therefore, the data are largely but not fully coherent, which is to be expected due to methodological reasons.
- CE1.5 – coherence of statistics on annual deaths with health statistics on total deaths: the discrepancies between these statistics over the years of their availability (2011-2018) remain mostly around or below 1% for all Member States and other reporting countries. There are conceptual differences in the data collections and different data sources are used. There may also be different definitions. Systematic biases over the whole time series are visible at national levels. So far, Eurostat has not systematically analysed the specific national drivers for these biases in each Member State.

CE2 *– To what extent are EU concepts and definitions harmonised with international practices or recommendations?*

→ *The European Statistical System, coordinated by Eurostat, participates in international efforts to harmonise concepts and definitions of population statistics. The few notable gaps identified relate to the population-base definition.*

Eurostat contributes to – and actively promotes – international statistical cooperation. This creates an environment of common concepts and definitions that ultimately foster international harmonisation of official statistics. A key element of this framework is the set of recommendations on censuses of population and housing organised and updated every 10 years by the UNECE and endorsed by the Conference of European Statisticians (CES). These CES recommendations are applicable – and intended to be relevant – to the needs of the 56 member countries of the UNECE. They are broadly comparable with the global census principles and recommendations coordinated by the UN Statistical Division. Moreover, as a key stakeholder of the European Statistical System (ESS), Eurostat is ideally placed to provide support to non-EU countries and non-EU institutions that are looking to approximate their official statistics to EU and international statistical standards.

The current population definition in the EU census legislation is based on the usual-residence concept with a residence rule that requires 12 months of residence. However, this current population definition allows a default to national concepts based on legal or registered residence without a time criterion (RI2.2), which is not formally in line with international recommendations that rely on a strict usual-residence concept[41]. In practice, the national data supplied to the United Nations or the OECD generally use the same population definitions as those data supplied to Eurostat. This means that there will be coherence between the data for a particular country supplied to Eurostat, the United Nations or the OECD. However, there will be international inconsistencies with the population definition and its application by different countries.

CE3 *– Is the current legal framework coherent with other EU policies and legislation, including the Charter on Fundamental Rights?*

[41] E.g. 2020 CES Recommendations for the 2020 Censuses of Population and Housing §§392, 393.

→ *The legal framework is generally coherent with other EU policies and legislation, including the Charter on Fundamental Rights. The gap in data on equality is not related to incoherent legislation.*

According to the contractor's analysis[42], the legal framework governing European population statistics is generally coherent with other EU policies and legislation, including the Charter on Fundamental Rights. The contractor's analysis also concluded that the EU's legal framework operates well together with other international legal instruments that also cover population statistics. In the OPC, 52% of respondents agreed with these conclusions, whereas only 15% disagreed (the remainder were neutral – 14%, or uncertain – 19%).

No major legislative gaps were identified, but several stakeholders mentioned issues related to the collection of data on equality[43]. For instance, the European Committee of Social Rights has identified a duty for national authorities to collect such data to inform policies. And at EU level, these data are repeatedly called for to support EU policies[44]. However, during consultations with NSIs, some countries indicated that their national legislation does not allow them to collect statistics on equality data, such as data on ethnic groups and other types of data considered as sensitive. Nevertheless, Commission studies[45] concluded that no Member State currently imposes an absolute prohibition on collecting data on ethnicity, sexual orientation or gender identity. Therefore, the data gap seems less the result of possible conflict between legal instruments and more the result of three things: (i) technical/statistical feasibility (especially with production systems largely based on administrative sources); (ii) cultural preconditions; and (iii) priority in certain Member States.

One important synergy is the synergy between the ESOP framework and the framework for European statistics on persons and households based on samples (footnote 9). In 2017, Eurostat's modernisation programme for social statistics suggested separate framework regulations for social sample surveys and for population and census statistics. However, the two frameworks are linked in many aspects. This is because the ESOP framework provides the population frames for data collections from samples (see CE1.2) as well as the necessary tools for benchmarking the data covered by samples.

5.7. EU added value (EU)

EU1 *– To what extent is statistical quality achieved at EU level?*

→ *The key elements of statistical quality adding value at EU level are completeness and comparability across Member States. The intervention has improved both of these quality dimensions significantly for the data that became regulated.*

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42 ICF Final Report supporting ESOP evaluation (2022), Section 4.3.2.

43 Defined as data providing breakdowns by characteristics identified as reasons for discrimination under Article 10 TFEU: sex; racial or ethnic origin; religion or belief; disability; age; or sexual orientation.

44 Targeted consultation with Commission services.

45 DG JUST (2017) Analysis and comparative review of equality data collection practices in the European Union – Data collection in the field of ethnicity; DG JUST (2017) Analysis and comparative review of equality data collection practices in the European Union – Data collection in relation to LGBTI people.

As noted earlier, the main value added at EU level for statistical quality is in completeness and comparability. Improvements in these two areas can be measured quantitatively based on the published data, but also qualitatively based on the opinions of key stakeholder groups from the OPC.

On completeness (EU1.1), the quantitative analysis is based on indicators SQ6.1 and SQ6.2 (Figure 16). This quantitative analysis illustrates how the common legal base (including provisions on data contents and deadlines for sending the data) has improved the EU-level completeness of regulated data from below 45% at the baseline (up to 2005) to essentially 100% post-intervention. However, the quantitative analysis also shows that voluntary data remain at a lower score of below 60% to this day. Most OPC respondents from most stakeholder groups find that the statistics are sufficiently complete.

On comparability (EU1.2), the quantitative analysis is based on indicators SQ1.5 and SQ2.1-SQ2.3. This analysis shows that regulation again improved the situation where it was effective (SQ2.3), but that comparability gaps remain in voluntary data (SQ2.2) or where the regulation was not effective in harmonising concepts (especially regarding the population base – SQ1.5 and SQ2.1). Most OPC respondents across most of the stakeholder groups said that the statistics were sufficiently harmonised/comparable at EU level overall. However, most respondents across most stakeholder groups agreed only 'somewhat' that the legislation ensured comparability between Member States. There is therefore a positive opinion overall that the legislation ensures comparability, but most stakeholders are also aware of certain limitations.

EU2 *– To what extent did the intervention achieve methodological soundness at EU level (harmonisation of definitions and implementation, including the population base)?*

→ *The legal framework does not establish a strict common population base. This has led to a fragmented landscape of national definitions used by Member States. This in turn had led to reduced comparability and a risk of double counting at EU level.*

The legal definition of usual residence provided for in the three Regulations of the legal framework provides for some flexibility: where the circumstances for usual residence based on 12 months of actual presence cannot be established, the legal or registered residence can be used instead[46]. The problem with these defaulting options is that they are not defined legally. In particular, there is no duration-of-residence criterion. This means that the conceptualisation and implementation is largely subject to national legal, administrative or policy contexts. This leads to a situation where there could be up to 27 factually different national definitions of the population base.

Under Article 8 of the Demography Regulation, Member States were required to carry out feasibility studies on the use of the definition of 'usual residence' for population and vital events. In 2016, Eurostat analysed these feasibility studies, and reported its findings on the current implementation of the definition of population base across all Member States under the current EU legal framework. The results showed that Member States were indeed using different population-base definitions, including individual Member States using different population-base definitions for statistics under different legal acts[47]. Figure 12 shows updated information from the targeted NSI survey illustrating the fragmented landscape of population-base definitions that remains to this day.

[46] Census Regulation Article 2(d), Demography Regulation Article 2(c), Migration Regulation Article 2(a).

[47] COM(2018) 843.

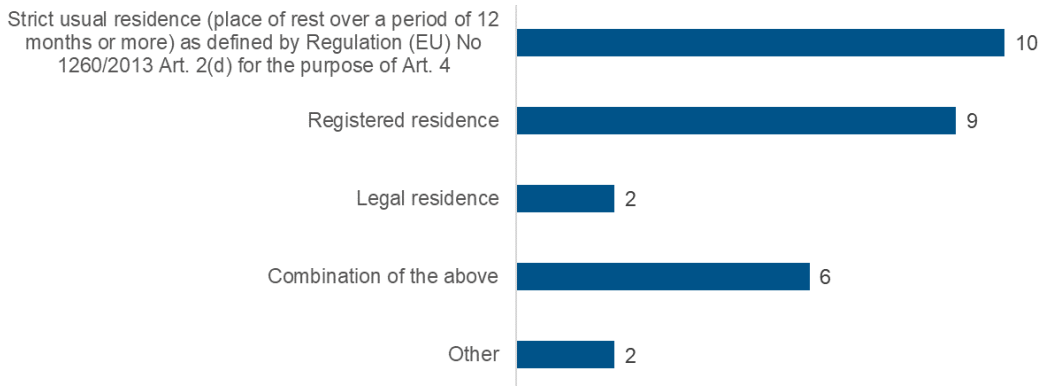

Figure 10 – Population-base definitions currently in use across ESS members, according to responses to the NSI survey. (Source: ICF analysis of NSI survey results)

Interestingly, the OPC results show that significant minorities or even majorities of respondents across all stakeholder groups (more than 42% in each group except for researchers and statistics producers) were not aware of this fragmented landscape. However, a majority across all groups – including statistics producers – agrees (often even 'strongly') that harmonisation is important.

In-depth interviews conducted by the contractor during the case studies highlighted that NSIs consider their national definitions to be adapted to the national context. The interviews also show that NSIs consider the benefits of the current use of national definitions to centre around meeting current national requirements. Some NSIs asserted that this can lead to issues with not having entirely comparable statistics at EU level. These NSIs said this can be an issue for some data users that had a greater need for comparable population statistics (those for whom precision at granular level is required). The use of national definitions can also give rise to issues of double counting when people move between Member States, and this can cause discrepancies in European population statistics. Data users and international partners of Eurostat identified similar problems, for instance when counting people who migrate between Member States to study or work, or where people have second homes and spend parts of the year living in two or more places.

***EU3** – To what extent are the users satisfied?*

→ *Users are generally of the opinion that European population statistics are of high quality overall and add value compared to other sources of statistics. The overall level of appreciation has been high since at least 2009, during the implementation of this intervention.*

Eurostat regularly conducts standardised user satisfaction surveys (USS) that provide a certain level of breakdown by topic areas. These can be used to obtain a time series to benchmark the OPC results. Figure 13 shows USS results for 2009-2020 on overall quality of the relevant area 'Population and social conditions' (more specific results for population statistics are not available) and compares these results to the average over all areas. There is a continuous high rating (80% or more of users ranking it as 'Very good/Good') with almost no variation between 2009 and 2019, both in the relevant area and in the average. The small annual variations are very similar between the area-specific

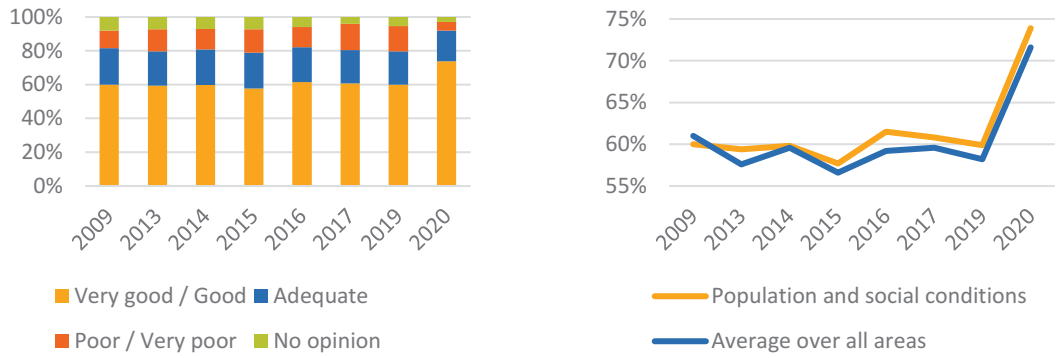

Figure 11 – Left: Eurostat user satisfaction survey opinions on overall quality of the area "Population and social conditions". Right: Comparison of the "Very good" category between area specific and average results. (Source: Eurostat analysis of user satisfaction survey results)

and average results, which suggests an effect mainly from variations in respondent groups between the years[48].

In the OPC, a vast majority of respondents across all stakeholder groups (more than 75% in each group) agreed that the statistics are of high quality overall. This aligns with the results seen in the USS time series, when the categories 'Very good/Good' and 'Adequate' are added together. Another question in the OPC was whether the current EU legislation adds value compared to other sources (national and international). Here again, the vast majority of respondents from all stakeholder groups (70% or more in all groups) agreed with the statement. The same high level of agreement of 70% or more is also found across all stakeholder groups on the question of whether the legislation enables them to obtain statistics from a single source. These responses need to be contextualised by feedback from EU-level institutional users (Commission DGs), who continue to stress key gaps and shortcomings for EU policymaking (see RE1, Section 5.2) both in the targeted consultation and on other occasions (e.g. regular sectoral Eurostat hearings with main user DGs).

5.8. Statistical quality (SQ)

Statistical quality dimensions evaluated in this section follow the *ESS handbook for quality and metadata reporting* (2021 re-edition)[49], which is based on the *European statistics Code of Practice* (2017 revision)[50] rooted in Articles 11 and 12 of Regulation (EC) No 223/2009 on European statistics (footnote 17).

***SQ1** – Coherence*

→ The intervention has largely improved coherence and consistency between datasets, but gaps remain due to the lack of harmonisation in the population base.

Within the scope of this evaluation, coherence refers to the compatibility of information across different datasets produced by the same entity (NSI or other) but potentially under

[48] There is one notable increase from 2019 to 2020, but average satisfaction increases very similarly, which suggests another (bigger) effect of the particular composition of the respondent group.

[49] https://ec.europa.eu/eurostat/en/web/products-manuals-and-guidelines/-/ks-gq-21-021

[50] https://ec.europa.eu/eurostat/web/products-catalogues/-/KS-02-18-142

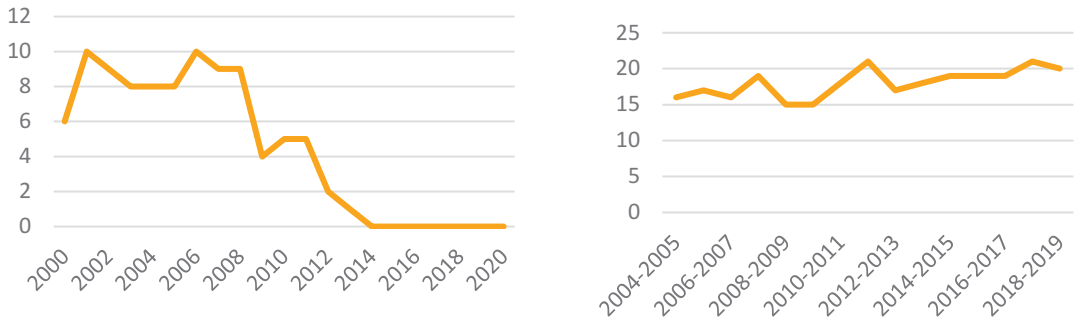

Figure 12 – Left: Number of ESS members with inconsistent population-stock aggregates across annual datasets (SQ1.3). Right: Number of ESS members with inconsistent demographic balances between reference years (SQ1.5). (Source: Eurostat analysis of Eurobase datasets)

different base acts (e.g. census vs annual population vs migrant population, etc.). This is in line with the ESS handbook conceptualisation, which compares data produced from different statistical processes. For instance, at the baseline, total population aggregates were notoriously inconsistent between annual demographic and migrant population datasets. Only the Demography Regulation links the population used at national level to that of the migrant stocks, so that these inconsistencies disappear from 2014 onwards (SQ1.3, Figure 14 left). Similarly, population stocks from 2011 are largely consistent with the census results of the same reference year for 25 ESS members (SQ1.4).

However, the harmonisation gap for the population base under the current legal framework (question RI2) leads to coherence issues that have persisted since the intervention. For instance, according to the metadata[51], 18 ESS members nominally apply the strict usual-residence concept based on a twelve-month stay for all annual population-stock data at national level (2020, SQ1.1). However, 5 of these 18 report different population totals between the dataset for Council voting weights (where strict usual-residence rules are enforced) and other annual population-stock datasets in 2020. This suggests an incoherent implementation of the usual-residence concept at national level (SQ1.2). In other situations, different population bases are used for population stocks and migration flows, which leads to inconsistencies between stock differences and demographic changes (demographic balance) between reference years. For any reference year since the baseline, between 15 and 21 ESS members have reported inconsistent demographic balances (SQ1.5, Figure 14 right). The intervention did not improve this situation because the underlying harmonisation gap was not resolved from the outset.

***SQ2** – Comparability*

→ *Generally, comparability at EU level is high and this is acknowledged by users (EU2). However, the lack of harmonisation in the population base has a negative impact.*

According to the ESS handbook, comparability refers to data from nominally the same statistical processes across geographic regions and/or time spans. For this evaluation, the concept is interpreted as comparability between ESS members and over reference periods. The intervention has hugely improved the situation in this regard by regulating common concepts and definitions for all Member States. This is largely acknowledged by

[51] There is a notable discrepancy between population bases used by Member States according to the metadata and according to the NSI survey responses (EU2, Section 5.7). The present analysis does not delve into this discrepancy.

users as documented under question EU1 (Section 5.7). Given the considerable progress compared to the baseline situation (no legal base for common concepts/definitions), the remaining comparability gaps surfacing in the data should be understood in context.

For instance, the differences between total populations reported for Council voting weights (strict usual-residence rules nominally enforced) and in other annual datasets (no common population-base enforced) may be used as a rough proxy indicator for the remaining level of comparability limitation across Member States (SQ2.1). From 2014 to 2020, relative differences over the years were on average less than 1% (for 23 of 27 Member States), and the largest relative differences encountered for individual Member States were always below 5% for any reference year. Other interesting comparability issues emerge from the comparison of migration flows, where nominally 'mirror' flows should be comparable (immigration from country A reported by country B vs emigration to B reported by A), but the under-coverage of emigration is a known problem. Indeed, at individual-country level, large comparability gaps have remained since the baseline and up to today (SQ2.2), although the underlying data are voluntary. A similar consistency check at the level of total intra-EU migration (SQ2.3) – based on mandatory data under the Migration Regulation – reveals much better comparability overall and a significant improvement from an asymmetry of 13.8% at the baseline down to 7.5% in 2016 and down to 3.7% in 2019[52].

Finally, time-series revisions of data may either improve accuracy post hoc (e.g. of the annual data following census years – see SQ3), or they may adapt the time series to new concepts or definitions retrospectively. In both cases, time-series revisions also improve the comparability of data over time. However, the current legal framework does not contain any provisions on time-series revisions of annual data. Most respondents to the public consultation across almost all key stakeholder groups give high priority to potential future improvements that would lead to better rules on revisions.

SQ3 *– Accuracy*

→ The current non-availability of metadata on accuracy across most Member States is a critical issue. Therefore, a quantitative accuracy assessment is currently very difficult or impossible.

Accuracy measures the reliability of data values in terms of bias and variation. As a first and crucial finding, the quality metadata made available by Member States do not currently document this quality dimension sufficiently (SQ3.1). For instance, virtually no information is provided on uncertainties (confidence intervals) of the data. On coverage errors (SQ3.3), only 2 ESS members provide quantitative estimates for annual population stocks under the Demography Regulation, and 8 ESS members provide them for census 2011 outputs at NUTS 2 level, with average magnitudes around 2% and the largest magnitudes up to 8% (under-coverage).

Non-provision of data points is also an accuracy issue. While this is typically not a problem for mandatory datasets (where compliance requires Member States to provide the data), statistical confidentiality may become a challenge for very detailed cross-tabulations mainly occurring in census outputs. As a general rule, any confidentiality treatment leads to loss of accuracy. When cell suppression is applied, this may lead to considerable parts of output tables not being published. This was the case in the 2011

[52] This also reflects increased Eurostat efforts that started after 2014 to facilitate bilateral information exchange to reduce coverage errors and thus reduce the underestimation of emigration flows.

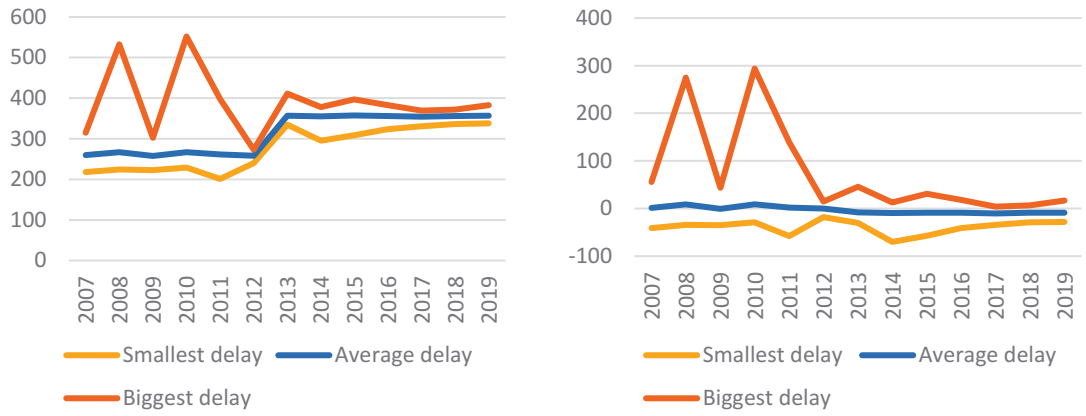

Figure 13 – Timeliness (SQ4.1, left) and punctuality (SQ5.1, right) of annual population data across the intervention period: smallest and largest delays for individual ESS members and average over all ESS members (in days). (Source: Eurostat analysis of data transmission dates recorded internally)

census round (SQ3.2), where nine ESS member used cell suppression. Among those countries, on average 116 (57%) of the output tables were affected and the average share of suppressed cells per affected output table was 2.4% (but going up to 76% in rare cases).

Finally, data revisions may be seen as a proxy indicator of accuracy. This is particularly true for revisions of annual data around census years in countries conducting a traditional census with full enumeration. Typically, census results are much more accurate and can thus be used as a benchmark to assess the level of accuracy of (pre-revised) annual data. For instance, after the 2011 census, 18 ESS members revised parts of their annual time series with average correction magnitudes at total population level around 1.4% but up to 7.5% (SQ3.4)[53].

***SQ4** – Timeliness and **SQ5** – Punctuality*

→ *Even though agreed deadlines became longer through the intervention, the significantly improved punctuality improved the overall timeliness of complete EU-level data. A comparison to national and other international practices shows room for further improvement on timeliness.*

Timeliness and punctuality are different but related concepts best discussed together. While punctuality refers to the delay between data delivery and the nominally agreed deadline, timeliness refers to the delay between data delivery and the reference date of the data. Thus, timeliness consists of two delay components: agreed nominal deadlines and the punctuality of keeping these deadlines. There is an intricate interplay between these components when moving from voluntary to mandatory data. Typically, in a voluntary scenario, more ambitious deadlines can be agreed (because they are not legally binding) and thus the greater issues are in punctuality. A different dynamic is at work when regulating data collections: it is more difficult to agree on an ambitious deadline in these cases, but punctuality is then much better (because it becomes a compliance factor).

[53] Correction magnitudes can be significantly higher in breakdowns (e.g. up to 21% for some sex/age groups). This stresses the importance of consistent and comprehensive revisions at least for all major demographic and regional breakdowns, not only for population totals.

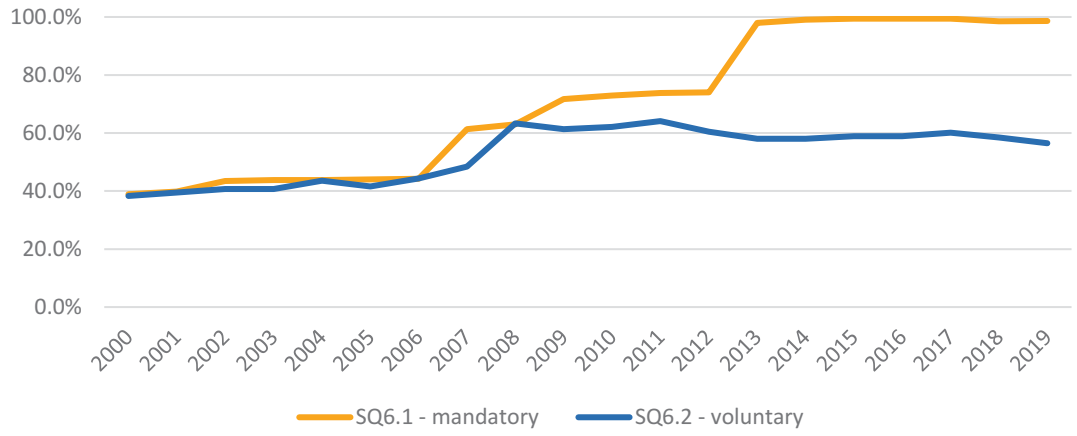

Figure 14 – EU-level completeness of breakdowns over time: those that became mandatory through the intervention (SQ6.1) and those that remain voluntary until today (SQ6.2). (Source: Eurostat analysis of Eurobase datasets)

Figure 15 shows the development of timeliness (SQ4.1, left) and punctuality (SQ5.1, right) of annual population data from the baseline until 2019, illustrating these two main effects of the Demography Regulation: after 2013, (i) the nominal deadline became longer – from 8.5 months to 12 months after the reference date – and (ii) the punctuality improved significantly. If completeness across all Member States is the goal at EU level, the longest delays are relevant. Here there has been an improvement in punctuality so that overall timeliness improved from the baseline (up to a delay of 552 days in 2010, with a delay in punctuality of up to 294 days) to post-intervention (the longest delay was of 397 days in 2013, with a delay in punctuality of up to 31 days).

Nevertheless, SQ4.2 shows that the current timeliness of annual European statistics remains below the timeliness of national statistical publications and other international statistics transmissions across most Member States. For instance, 22 ESS members publish national population stock data within 6 months of the reference date. And at least 17 ESS members also manage to publish data on vital events and on migration within 6 months of the reference date. Moreover, 13 ESS members send provisional data on vital events to the United Nations Statistics Division within 4 months of the reference year.

***SQ6** – Relevance*

→ *Apart from the high policy relevance of statistical topics addressed through the intervention (RI1), mandatory datasets ensure completeness at EU level, thus making statistics much more relevant.*

In this evaluation, there is considerable overlap between relevance as a statistical-quality dimension and the concept of relevance of the intervention addressed in Sections 5.1 and 5.2. In particular, questions RI1 to RE2 have pointed out that the intervention was initially highly relevant in terms of data needs and quality goals, but has lost relevance over time since the implementation. This loss in relevance was due to emerging needs on data content and further quality aspects that the adopted legal framework was not flexible enough to accommodate.

Another aspect of relevance that should complement this picture is completeness, namely within the scope of this evaluation especially completeness of annual data across ESS

members. Figure 16 shows the development of completeness of annual[54] datasets over time that are now regulated (SQ6.1) and of datasets that remain voluntary (SQ6.2). As observed in various earlier instances, there is a significant regulatory effect. The completeness of mandatory data increased to practically 100% in two steps correlated with the adoption of the Migration and Demography Regulations in 2007 and 2013 respectively. In the wake of the Migration Regulation, the completeness of voluntary data improved moderately, but has stagnated at around 60% ever since.

6. CONCLUSIONS

6.1. What is working well

This evaluation has documented significant overall improvements in European population statistics through the intervention, compared to the initial problems and needs faced by the statistical community before the intervention. In particular, the current legal framework has significantly increased EU value added. It achieved this by greatly improving – for the datasets that became regulated – EU-level: (i) completeness and comparability (evaluation question EU1); (ii) coherence and consistency (SQ1); and (iii) timeliness (SQ4). Moreover, RI1 showed that these now-mandatory datasets delivered on all relevant topical needs for policymaking and institutions at EU level that were known at the baseline in the 2000s. The intervention thus improved the effectiveness (EE1-3), efficiency (EI1-6), and coherence (CI1-2, CE1-3) of the statistical framework compared to the baseline situation, which relied solely on voluntary data collections. In the stakeholder consultation, most respondents across all key stakeholder groups confirmed these improvements (e.g. EU1) and stressed the added value of the current legal framework at EU level (EU3).

6.2. What is not working well

This evaluation has also revealed significant and persisting gaps in the EU's legal framework for statistics. More precisely, the current legal framework:

1. does not fully ensure sufficiently complete, coherent, and comparable statistics, especially when voluntary datasets covering relevant policy needs are factored in, which may lead to sub-optimal statistical evidence for decision-making;
2. does not ensure sufficient availability of population data in terms of frequencies and timeliness of data publications;
3. fails to capture characteristics and details of topics or groups that have become politically and societally relevant during the past decade;
4. is not flexible enough to adapt to evolving policy needs and to enable exploitation of data from administrative and other new sources in the Member States and at EU level.

Each gap is briefly elaborated on in the paragraphs below.

Gap 1: Coherence, comparability, completeness

The most significant quality gap remaining is the lack of harmonisation of the population base. More precisely, three conceptually different definitions (usual residence, registered

[54] As pointed out in question CI1, census outputs are fully mandatory and thus complete, up to the suppression issue addressed in question SQ3 on accuracy.

residence, legal residence) are currently allowed and applied by Member States, sometimes using different definitions for different datasets. The legislation is not detailed enough to define exhaustively what is included in (and excluded from) the population. This leads to issues of relevance (RI2, RE1) as well as statistical coherence (SQ1) and comparability (SQ2). Notably, it creates a situation where the vast body of demographic and migration statistics cannot reach its potential in terms of comparability between Member States and coherence between datasets due to differences in the definitions applied. The lack of provisions on time-series revisions is another gap leading to reduced comparability over time (SQ2).

Many statistical outputs continue to be collected under voluntary arrangements[55]. This leads to various quality (and other) gaps documented in this evaluation. It reduces the effectiveness (EE1), efficiency (EI2 incl. REFIT relevance) and internal coherence (CI1) of the intervention, but it also leads to reduced EU value added (EU1), mainly due to completeness gaps across Member States (SQ6). This finding is in line with the opinion of respondents to the OPC across all stakeholder groups – except statistics producers – that potential future improvements should include measures to regulate the provision of data that are currently collected and provided voluntarily.

Gap 2: Timeliness and frequency

The current timeliness of the statistics (for annual and – in particular – census data) remains below user expectations (RE1). It also remains below the timeliness of national statistical publications and other international statistics transmissions across most Member States (SQ4). Similarly, annual frequency is perceived by users as insufficient for various policy needs, for instance urban/rural integration (requiring seasonal data – RE1) and dynamic crisis response (requiring effective measures for quick and highly frequent – e.g. monthly or weekly – ad hoc data). This problem with timeliness is also connected to the lack of flexibility (RE2).

Gap 3: Details of politically and societally relevant topics and groups

Question RE1 has established various gaps in statistical detail that have significantly reduced the policy relevance of the current legal framework over time. Most notably, these gaps concern the characteristics of politically relevant topics and groups (e.g. housing data for the Green Deal; data on migrants and EU mobility; data on the urban/rural population; and data on vulnerable minority groups for policies on non-discrimination and fundamental rights). These gaps can also be seen in the insufficient geographic granularity of the statistics (including most notably functional typologies and georeferenced data for urban/rural integration and cross-border analysis). These gaps were confirmed through the targeted consultation with Commission statistical correspondents, but also by most respondents to the OPC across almost all key stakeholder groups.

Gap 4: The lack of flexibility of the legal framework

Question RE2 has generally established that the current legal framework is failing to adapt sufficiently to changing policy needs. This has led to a gradual loss of relevance over time and to lost opportunities for efficiency gains (EI2). In particular, the framework establishes a fixed set of statistical units, variables/breakdowns and cross-tabulations to be produced regularly, without specific mechanisms to update these statistical contents

[55] E.g. on marriages, divorces, legally induced abortions, losses of citizenship, as well as certain breakdowns of migration stocks and flows, live births and deaths.

efficiently. It also does not fully embrace the exploitation of data from administrative sources, and in particular other new sources, that may become – and are already becoming – available in the Member States and at EU level. Finally, the current legal framework remains output oriented, thus allowing multisource statistics. However, legislation does not sufficiently promote the use of data sources such as EU-level administrative records and privately held data (including for instance geospatial systems or mobile operators' data).

6.3. Lessons learnt

The key legislative drivers for the gaps identified can be summarised in the four bullet points below.

- Only **mandatory data collections** with defined common rules can ensure completeness and timeliness of statistics at EU level. Regulating voluntary data collections that already have high completeness may significantly improve effectiveness and efficiency as considerable EU added value can be generated at limited incremental cost.
- **Voluntary data collections** are appropriate instruments to pilot the production of new topics or characteristics, and to foster the incremental capability of national statistical systems to provide such new data. However, they tend to become inefficient over time because recurrent production costs eventually fail to generate substantial EU value added in terms of completeness across Member States.
- **Loose legal definitions** of statistical topics lead to loss of control over conceptual harmonisation. This ultimately leads to a loss of coherence and comparability over time. The example of the definition of the population base has shown how a defaulting clause originally introduced as an exception with limited scope has turned into a new factual standard.
- A **legal framework that is too rigid** makes it difficult to maintain relevance over time. The intervention has been losing relevance rather quickly, beginning already during its implementation period, due to a lack of flexibility mechanisms to adapt data collections to evolving needs[56] or to profit from opportunities driven by new data sources becoming available.

Finally, this evaluation has also identified two regulatory causes of current inefficiencies in a REFIT context (Section 5.4). In particular, question EI1 has identified administrative redundancies in compliance, enforcement and monitoring. This is because the current legislation is scattered across three legal acts that were not developed together. Moreover, EI2 has shown that the current status quo of producing many voluntary datasets with high – but not full – completeness across Member States leads to significantly reduced efficiency at EU level.

[56] With a minor exception under the Census Regulation, which leaves certain room to define statistical needs for each EU census round shortly before the census year, thus maintaining a higher relevance of census outputs over time. However, the 2021 round has shown that this flexibility was not sufficient in terms of introducing georeferenced data.

ANNEX 1: PROCEDURAL INFORMATION

1. LEAD DG, DECIDE PLANNING/CWP REFERENCES

Lead DG	Eurostat
Decide Planning	PLAN/2021/10584[57]
CWP reference	CWP 2022 Annex II - REFIT

2. ORGANISATION AND TIMING

After political validation of the ESOP initiative in February 2021, an ISG chaired by Eurostat and composed of representatives of 16 Commission DGs[58] was set up. The role of this ISG was to supervise progress on the combined evaluation and impact assessment, including the stakeholder consultations. The ISG met four times to discuss the evaluation in this staff working document. Details and dates of these meetings are set out in the table below

Meeting date	Topics discussed
31.3.2021	• Introduction to European population statistics • Draft evaluation roadmap/inception impact assessment (IIA) • Draft consultation strategy • Draft terms of reference for a tender on evaluation/impact assessment support
20.8.2021	• Introduction of contractor ICF for support study • Progress on evaluation/IA incl. contractor inception results • Stakeholder consultation plan, activities and timing • Draft OPC questionnaire (launch of written consultation)
21.10.2021	• Progress on evaluation/IA incl. contractor interim results • Update on stakeholder consultation activities
27.1.2022	• Contractor feedback on final workshop results • Complete draft SWD on evaluation for endorsement • Advanced progress draft SWD on impact assessment • Draft SWD on consultation synopsis report

3. EXCEPTIONS TO THE BETTER REGULATION GUIDELINES

None.

[57] https://intragate.ec.europa.eu/decide/sep/?view-dossier-details-id=DORSALE-DOSSIER-2021-5573

[58] AGRI, BUDG, EAC, ECFIN, EMPL, ENER, HOME, INTPA, JRC, JUST, NEAR, REGIO, RTD, SANTE, SG and SJ.

4. CONSULTATION OF THE REGULATORY SCRUTINY BOARD (IF APPLICABLE)

The RSB was not consulted over the evaluation itself. However, due to a back-to-back setting, this SWD is annexed to the SWD on impact assessment that was consulted with the RSB at a meeting on 16 March 2022.

5. EVIDENCE, SOURCES AND QUALITY

Evidence and sources

Evidence	**Sources**
Desk research	• Statistical data and metadata published during the evaluation period, and partially before the evaluation period when available (baseline) • Legal acts and explanatory memoranda related to the intervention • Commission reports on implementation of legislation • Methodological guidelines and papers • International recommendations • Policy documents establishing statistical needs A comprehensive list of documents reviewed is provided in Table 4. The fact that the existing legal framework evaluated here was adopted before Better Regulation guidelines were in place presented a major obstacle, as the available documentation does not provide the richness and comprehensiveness of information typically required for evaluation. The stakeholder consultations attempted to balance resulting gaps as much as possible.
Opinion of statistics users: Commission services	• Written consultation with the Commission network of statistical correspondents • Bilateral exchanges to identify specific needs • OPC survey
Opinion of other statistics users	• Topical workshop with selected organisational statistics users on problem definition • In-depth interviews with selected organisational statistics users • OPC survey
Opinion of statistics producers	• Regular consultation of expert groups (see below) • Case studies with five selected Member States • OPC survey • Targeted survey with NSIs complementing the OPC

Expert advice used

Eurostat has regularly engaged its relevant expert groups (see Register of Commission Expert Groups[59]) to seek advice and inputs on the progress of evaluation and impact assessment. The European Statistical System Committee was also informed about the progress. The three expert groups are:

- the Working Group on Population and Housing Censuses (E01544) and its subgroup the Task Force on the Future of Censuses;
- the Working Group on Population Statistics (E03076);
- the European Directors of Social Statistics (E01552).

External support study

Eurostat carried out this evaluation with topical support from a contractor study carried out by ICF SA, Belgium. In particular, the support study provided: (i) the economic and subsidiarity analysis; (ii) the case studies on population definitions; and (iii) organisational support on stakeholder consultation activities. Parts of this evaluation SWD are therefore based on the final report on evaluation support and other analysis documents prepared by the contractor.

Quality

Based on the evidence sources and expert advice mentioned, Eurostat has carried out this evaluation mostly in-house, with topical support from an external support provider on cost assessment and an economic study as also mentioned above. Annex 4 provides the complete research framework for this evaluation including all questions answered, corresponding indicators analysed and mapping onto evidence sources or the support study where applicable.

Eurostat has documented all internal research on applicable indicators in detail (indicator definition, specific sources, measurement approach, raw data and analysis). All external references relevant for answering the evaluation questions were also added to this report.

Eurostat has also monitored the work of the external support contractor regularly (at least every two weeks) and assessed the quality of the final report on evaluation from the external support study. The overall work quality and deliverables were found to be in line with the contract and generally sufficient to be used for this evaluation.

[59] https://ec.europa.eu/transparency/expert-groups-register/screen/home

Table 4 – List of reviewed documents

Author	Published	Title
Agilis	2017	Analysis of the legal and institutional environment in the EU Member States and EFTA Countries
DG ECFIN	2009-2021	Ageing Report 2009, 2012, 2015, 2018, 2021
DG ECFIN	2021	Euro Area Housing Markets: Trends, Challenges and Policy Responses
DG HOME	2009-2020	Annual reports on migration and asylum
DG JUST	2018	Guidelines on improving the collection and use of equality data
DG JUST	2017	Analysis and comparative review of equality data collection practices in the European Union – Equality data indicators: Methodological approach Overview per EU Member State Technical annex
DG JUST	2017	Legal framework and practice in the EU Member States
DG JUST	2016	European handbook on equality data
DG REGIO	2022	8th Report on Economic, Social and Territorial Cohesion
DG REGIO	2017	7th Report on Economic, Social and Territorial Cohesion
DG REGIO	2014	6th Report on Economic, Social and Territorial Cohesion
European Central Bank (ECB)	2018	The state of the housing market in the euro area (ECB Economic Bulletin, Issue 7/2018)
European Commission	2021	Green paper on ageing: Fostering solidarity and responsibility between generations
European Commission	2021	Report from the Commission to the European Parliament and the Council on the implementation of Regulation (EC) No 862/2007
European Commission	2018	Commission Implementing Regulation (EU) 2018/1799 on a temporary direct statistical action for the dissemination of selected topics of the 2021 population and housing census geocoded to a 1 km^2 grid
European Commission	2018	Report from the Commission to the European Parliament and the Council on the implementation of Regulation (EC) No 862/2007
European Commission	2018	Report from the Commission to the European Parliament and the Council on the implementation of Regulation (EU) No 1260/2013
European Commission	2017	Commission Implementing Regulation (EU) 2017/881 implementing Regulation (EC) No 763/2008 on population and housing censuses, as regards the modalities and structure of the quality reports and the

Author	Published	Title
		technical format for data transmission
European Commission	2017	Commission Regulation (EU) 2017/712 establishing the reference year and the programme of the statistical data and metadata for population and housing censuses provided for by Regulation (EC) No 763/2008
European Commission	2017	Commission Implementing Regulation (EU) 2017/543 laying down rules for the application of Regulation (EC) No 763/2008 on population and housing censuses as regards the technical specifications of the topics and of their breakdowns
European Commission	2015	Report from the Commission to the European Parliament and the Council on the implementation of Regulation (EC) No 862/2007
European Commission	2014	Commission Implementing Regulation (EU) No 205/2014 laying down uniformed conditions for the implementation of Regulation (EU) No 1260/2013 on European demographic statistics, as regards breakdowns of data, deadlines and data revisions
European Commission	2012	Report from the Commission to the European Parliament and the Council on the implementation of Regulation (EC) No 862/2007
European Commission	2011	Proposal for a regulation of the European Parliament and of the Council on European statistics on demography
European Commission	2010	Commission Regulation (EU) No 1151/2010 implementing Regulation (EC) No 763/2008 on population and housing censuses, as regards the modalities and structure of the quality reports and the technical format for data transmission
European Commission	2010	Commission Regulation (EU) No 519/2010 adopting the programme of the statistical data and of the metadata for population and housing censuses provided for by Regulation (EC) No 763/2008
European Commission	2010	Commission Regulation (EU) No 351/2010 implementing Regulation (EC) No 862/2007 on Community statistics on migration and international protection as regards the definitions of the categories of the groups of country of birth, groups of country of previous usual residence, groups of country of next usual residence and groups of citizenship
European Commission	2009	Commission Regulation (EC) No 1201/2009 implementing Regulation (EC) No 763/2008 on population and housing censuses as regards the technical specifications of the topics and of their breakdowns
European Commission	2007	Proposal for a Regulation of the European Parliament and of the Council on population and housing

Author	Published	Title
		censuses
European Commission	2005	Proposal for a Regulation of the European Parliament and of the Council on Community statistics on migration and international protection
European Committee of the Regions	2016	The impact of demographic change on European regions
European Parliament	2021	Resolution of 21 January 2021 on access to decent and affordable housing for all
European Parliament	2019	Demographic trends in EU regions
European Parliament and Council	2019	REGULATION (EU) 2019/1700 establishing a common framework for European statistics relating to persons and households, based on data at individual level collected from samples
European Parliament and Council	2013	Regulation (EU) No 1260/2013 on European demographic statistics
European Parliament and Council	2013	Regulation (EU) No 549/2013 on the European system of national and regional accounts in the European Union
European Parliament and Council	2009	Regulation (EC) No 223/2009 on European statistics
European Parliament and Council	2008	Regulation (EC) No 763/2008 on population and housing censuses
European Parliament and Council	2007	Regulation (EC) No 862/2007 on Community statistics on migration and international protection
European Parliamentary Research Service (EPRS)	2021	Demographic Outlook for the European Union
European Parliamentary Research Service (EPRS)	2013	How can regional and cohesion policies tackle demographic challenges?
Eurostat	2021	European statistical system handbook for quality and metadata reports
Eurostat	2007-2021	Sustainable development in the European Union — Monitoring reports on progress towards the SDGs in an EU context 2007, 2011, 2015, 2019, 2021
Eurostat	2021	The European System of Accounts — ESA 2010 — interactive version
Eurostat	2020	Quality assurance framework of the European statistical system
Eurostat	2010-2020	Report on the impact of demographic change 2010, 2015, 2020
Eurostat	2014-2020	Eurostat Regional Yearbook 2010, 2014, 2020
Eurostat	2009-2020	Eurostat User Satisfaction Survey reports 2009, 2013-2017, 2019-2020
Eurostat	2019	EU legislation on the 2021 population and housing

Author	Published	Title
		censuses – explanatory notes
Eurostat	2018	European statistics code of practice for the national statistical authorities and Eurostat
Eurostat	2011	EU legislation on the 2011 population and housing censuses – explanatory notes
ESSnet KOMUSO	2019	Quality Guidelines for Multisource Statistics
ESSnet KOMUSO	2019	Quality Guidelines on Frames for Social Statistics
ICF	2022	Final report on evaluation support study for European statistics on population
ICF	2021	Inception Report on support study for European statistics on population
United Nations	2017	Principles and Recommendations for Population and Housing Censuses
United Nations Economic Commission for Europe (UNECE)	2018	Guidelines on the use of registers and administrative data for population and housing censuses
United Nations Economic Commission for Europe (UNECE)	2015	Recommendations for the 2020 Censuses of Population and Housing
United Nations Economic Commission for Europe (UNECE)	2014	Measuring population and housing. Practices of UNECE countries in the 2010 round of censuses
United Nations Economic Commission for Europe (UNECE)	2008	Measuring population and housing Practices of UNECE countries in the 2000 round of censuses

ANNEX 2: METHODS AND ANALYTICAL MODELS

The external contractor ICF has developed an approach to estimate the baseline and incremental costs on Member States and the Commission (Eurostat) under this intervention, broken down by statistical domain in scope. The estimation documentation is provided here below.

Detailed approach to the quantification of costs and benefits (efficiency)

The costs and benefits estimated as part of this evaluation have been those associated with the current legal framework on annual population statistics and more specifically focusing on:

- Regulation (EC) No 862/2007 on Migration;
- Regulation No 1260/2013 on demographic statistics;
- Regulation No 763/2008 on population and housing censuses.

Costs have been calculated for four main stakeholder groups, namely: (i) Member States and their NSIs; (ii) the European Commission, including Eurostat specifically; (iii) employers/businesses/non-institutional data users; and (iv) EU citizens and non-EU nationals. The first two groups are generally referred to as 'public administration' for the purposes of cost assessments.

Cost-and-benefit items were identified and considered for all four groups. However, it was only possible to calculate quantified cost estimates for the first two groups, and it was generally not appropriate to calculate benefits. This was in part due to a lack of available data, for example on the costs to citizens of participating in census rounds. More generally however, it was because certain costs and benefits were inappropriate for quantification due to their effects being more ambiguous and variable across Member States and stakeholder groups. For example, the benefits to non-institutional data users from increased access to high-quality European statistics on population would be challenging to quantify. This is because these benefits would depend on several additional factors, such as how these data would be used or the cost of accessing data through alternative sources. Therefore, estimates for benefits are not available, and it is possible that the estimates for costs reported are an underestimate.

Our overall approach to estimating costs and benefits consisted of the key steps set out in the bullet points below.

- Firstly, the cost-and-benefit items associated with each regulation and relevant provisions were identified and itemised. This itemisation considered: (i) the type of cost (i.e. one-off/recurring and overall cost categories); (ii) the stakeholder group impacted; and (iii) for Member States, what proportion and to what extent these Member States were impacted by the implementation of the current legal framework. The evaluation has taken into consideration the fact that Member States were already providing data on a voluntary basis before the implementation of the different Regulations. The costs-and-benefits itemisation was reviewed and refined in cooperation with Eurostat.
- As noted above, the contractor determined – and agreed with Eurostat – that it was not possible to quantify all benefits. For each cost item, estimates for the value of the cost were developed. Details are set out below on how this process varied between stakeholder groups and regulations/types of data. Overall,

estimates and assumptions were based on a combination of several factors, including:

- inputs provided by Eurostat, including through regular meetings/feedback requests as well as data on administrative-, grant-, IT/infrastructure- and contract-related costs to Eurostat associated with the three in-scope Regulations;
- a review of the completeness of voluntary and mandatory statistics over time;
- a survey of Member States on costs associated with population statistics;
- data gathered throughout the research study, including the workshops, literature review, NSI survey and OPC;
- The study team members' experience of conducting similar quantification exercises, in particular on the cost of reporting to the EU, training of staff, familiarisation with EU legislation, transposition, and compliance costs (the approach is similar to: (i) one used most recently for a DG HOME study assessing the impacts of possible revisions to the Long-Term Residency and Single Permit Directives in 2021 (positive opinion of the RSB in October 2021); (ii) a DG JUST Study on the impacts of a possible revision of the Consumer Credit Directive (CCD) in 2020-2021 (positive opinion of the RSB in May 2021); and (iii) a DG HOME Evaluation of the Counter-Terrorism Directive (positive opinion of the RSB in July 2021), among others in previous years).

- Costs and cost-savings for each cost item were then aggregated across Member States where relevant, and over the period between the implementation of the relevant regulation[60] and 2021.
- This enabled aggregate costs across all relevant Member States to account for: (i) differences in costs across Member States (e.g. public sector salaries[61]); and (ii) the extent to which Member States were impacted by the Regulations[62]. This also accounted for costs accrued across a longer time period. For the sake of simplicity and comparison, the evaluation estimated all costs in 2021 EUR.
- Finally, estimated costs were aggregated for each Regulation and estimated by stakeholder group (Member States and the European Commission) and cost type (i.e. one-off and recurring). Recurring costs were estimated as average annual costs across all Member States. Costs are all estimated in 2021 EUR and as incremental, relative to the estimated baseline costs (i.e. the costs incurred before the implementation of the Regulations due to voluntary data provisions/collections). Details of what this aggregation process consisted of are

[60] 2007 for Regulation No 862/2007 on Migration; 2013 for Regulation No 1260/2013 on Demographic Statistics; and 2008 for Regulation No 763/2008 on Population and Housing Censuses.

[61] Salaries across Member States were estimated using the estimated daily labour cost of public administration staff, assuming 215 working days per year: *Labour cost, wages and salaries, direct remuneration (excluding apprentices) by NACE Rev. 2 activity) - LCS surveys 2008, 2012 and 2016 [lc_ncost_r2]. Salaries are projected to 2021 using the HICP index (2020=100).*

[62] Due to limitations in the available data on which Member States were – or are likely to be – affected by the Regulations/changes specifically, this proportion was calculated on the total costs across all Member States (i.e. if it was assumed that 50% of Member States would be affected, the cost was estimated to be 50% of the total overall cost across all Member States). This may not be entirely accurate, however, since costs, such as labour costs, vary across Member States.

set out below along with specific calculations and assumptions applied to estimate costs for each stakeholder group and limitations of the model.

Evaluation

Annual population data (Demography and Migration Regulations)

For costs associated with the introduction of the Demography and Migration Regulations (i.e. No 862/2007 and No 1260/2013), following the estimation of the values for each cost item (as set out in step 2 above), overall costs (i.e. step 3 and 4) were estimated as set out in the bullet points below.

- Firstly, the baseline costs were estimated, i.e. the costs incurred before the implementation of the relevant Regulations (i.e. 2007 for the Migration Regulation and 2013 for the Demography Regulation). These costs related to the collection, analysis and publication of demographic and migration data that was provided voluntarily before the introduction of the Regulation, and later made mandatory[63]. These costs are aggregated across all Member States (where relevant) but estimated for one year only, rather than by an average of annual costs over several years. This approach was chosen because, before the introduction of the Regulation, Member States provided data to Eurostat on a voluntary basis. Therefore, even though there was no obligation at that time to provide data, some costs were still incurred by both stakeholders in collecting, sending and publishing the data[64].
- In the second step, the contractor calculated the total costs (annual average across the period between implementation and 2021 for recurring costs) for all new costs associated with the introduction of the Regulations, as set out in the cost itemisation, across each stakeholder group (all Member States and the Commission) as per step 3 above. Then, it added all these figures for all cost items into an overall total for all new one-off and recurring costs to Member States and the Commission.
- Finally, the relevant baseline cost was subtracted from the total current cost calculated (by cost type and stakeholder group) to estimate the total incremental cost (annual average for recurring costs) to all Member States associated with the introduction of the Regulations.

Estimation of costs for the European Commission, including Eurostat

[63] Migration and demographic data points that were provided voluntarily before the introduction of the Regulations and remain voluntary were excluded from the analysis as part of the evaluation. This was because these data points were not deemed to be costs related to the introduction of the Regulations. Costs associated with the provision of voluntary data following the implementation of the three in-scope Regulations are included within the impact assessment, which assesses the impact of making these data points mandatory.

[64] However, a certain proportion of those costs would be incurred by Member States regardless, because production of these data would be in line with national interests. To take this into account, we reduce administrative costs at the baseline by 50%.

The main costs for the European Commission – and how these costs were calculated – are set out in the bullet points below.

- The first category of costs was the introduction and subsequent monitoring, reporting and enforcement of the Regulations. The Regulations required Eurostat to be provided with demographic and migration data within certain parameters of quality and timeliness. The Regulations also required Eurostat to publish these data and required guidance and implementing acts to be issued. The costs of these activities were based on estimates as to the number of days that would be required per type of activity. The number of days was then multiplied by the daily cost of a Commission official level AD-10 (i.e. based on a monthly salary of around EUR 9 000 based on EU statistics[65]), assuming an average working year of 215 days, and an average of 17.9 days worked per month (based on figures from Eurostat for working days for full-time equivalent (FTE) staff[66]), based on the general formula:

  Number of days per FTE * number of FTEs * daily wages.

- The second category of costs was the administrative costs to Eurostat. This included the cost of financial support (grants) provided to Member States to enable them to provide data and attend working-group meetings and business trips. It also included the costs of Commission research studies on the Regulations. These estimates were based on data provided by Eurostat. For grants, business meetings and trips, it was assumed that costs were evenly split across the Demography and Migration Regulations. Contract costs were 100% relating to migration data, as indicated by Eurostat[67].
- The third category of costs was the IT and infrastructure costs required by Eurostat to implement and maintain systems that receive and publish statistical data and metadata. These estimates were based on data provided by Eurostat. It was assumed that costs were evenly split between the Migration and Demography Regulations.
- The fourth category of costs was baseline costs i.e. any costs incurred by Eurostat, relating to migration and demography data, before the introduction of the relevant Regulations. It is assumed that the only baseline costs incurred related to the receipt and publication of data provided voluntarily, which was later rendered mandatory by the Regulations. No regulatory or compliance costs were incurred due to the lack of regulation. No IT-related costs were incurred relating to migration or demography data before the introduction of the Regulations as none were reported by Eurostat before 2015.

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[65] Figures available from https://euemployment.eu/how-much-do-eu-officials-earn/.

[66] This was calculated by dividing 215 by 12. Estimate available at: Eurostat (2020) *Guiding principles for the Cost analysis of European Statistics;* available at: https://ec.europa.eu/eurostat/documents/3859598/10501168/KS-GQ-19-006-EN-N.pdf.

[67] Grants are calculated as average annual costs over the entire period and presented as recurring costs, although in practice they were provided over only 3 years. Business trips, meetings and contractual costs are presented as recurring costs and calculated as annual average costs across the whole period. Contract costs are presented as a one-off cost for the sake of simplicity, but in practice are incurred over the course of 3 years.

Estimation of costs for national authorities

The calculations of administrative, compliance, and enforcement costs for Member States and their NSIs were largely based on a general formula:

Number of days per FTE * number of FTEs * daily wages* proportion of MS impacted

Typically, the number of days and number of FTEs assumed for activities (such as transposition, monitoring, reporting, familiarisation, adaptation, training, communication/ information provision, etc.) were based on the study teams' own assumptions. These own assumptions were in turn based on both estimates provided by NSIs within the NSI survey and the study teams' experience in conducting similar studies, as stated above. For example, feedback from the NSI survey stated that Member States employ around 6 FTEs (per year) on average to compile and provide mandatory annual population data. Therefore, assuming that respondents may have in some cases been thinking of only demographic or migration data when providing this estimate, it is assumed throughout the analysis that Member States employ 5 FTEs on average per regulation[68]. In addition, according to responses to the NSI survey, on average 42 FTEs were employed in each Member State to work on population data. Assuming around 60% of these were dedicated to the census[69] it was estimated that around 8.5 FTEs in total were employed to work on each of the Demography and Migration Regulations in each Member State. These data, relative to the estimate provided for the FTEs required specifically for compiling and providing mandatory annual population data, was used to derive the number of additional FTEs (3.5 per Member State) required for additional tasks related to the Regulations (e.g. monitoring compliance, reporting etc.). Assumptions about the complexity of the task and data involved were also taken into account to adjust the estimates.

When calculating baseline costs, the proportion of Member States affected by the introduction of the Regulations was based on estimates provided by Eurostat of the completeness of mandatory statistics over time. Based on this research, overall mandatory statistics were provided by around 40% of Member States before 2006. This percentage was applied to the calculation of administrative costs incurred by Member States at the baseline before the introduction of the Regulations. As noted above, this proportion was applied to overall total costs, since identifying specific Member States that would be affected was not possible. When calculating costs associated with the current Regulations, assumptions were based on the study teams' understanding of the processes required by each regulation. This understanding was guided by discussion with Eurostat. This discussion covered topics such as the proportion of Member States that would have to update their processes to align with mandated regional definitions, or decide upon preferred definitions.

For costs relating to the IT equipment required to collect and analyse the data and metadata required by the Regulations, costs were based on the average of all estimates

[68] Between 12 and 17 NSIs provide an estimate, depending on the year.

[69] This assumption is based on responses to the NSI survey, where two respondents provided an estimate of the size of the census team relative to all staff working on population statistics (in one case the census team represented 60% of overall staff and in another 40%), combined with the assumption that the census is more costly.

from the NSI survey[70]. It was assumed that costs were evenly split between the Migration and Demography Regulations. Costs relating to the delivery of feasibility studies on the implementation of the Demography Regulation were estimated based on grant data provided by Eurostat, by assessing the total eligible costs to Member States for delivering such studies. Costs relating to the European Statistical System Committee (ESSC) were estimated based on publicly available information on the ESSC's membership and its number of annual meetings[71].

Census data

The method adopted for estimating costs associated with the introduction of the Population and Housing Census Regulation (No 763/2008) differed from that used to estimate annual population statistics. This was due to the availability of data on the costs incurred by Member States to deliver the 2000/2001 and 2010/2011 census rounds[72]. These data were drawn upon to estimate the cost to Member States, which was combined with costs borne by the Commission to produce an overall view. For the census, the baseline was estimated to be the cost of conducting the 1990/1991 and 2000/2001 census rounds, whereas the 'post-implementation' view was equivalent to the cost of conducting the 2011 and 2021 census rounds.

Estimation of costs for the European Commission

Costs to the European Commission, including Eurostat, associated with the introduction of the Census Regulation were calculated using the same process as costs relating to annual population data. Costs were calculated in relation to: (i) regulatory costs, including the provision of grants; (ii) enforcement costs; (iii) and administrative and IT-related or equipment-related costs. These calculations drew on the same data, general formula and assumptions set out above, and focused on census delivery. Baseline costs were estimated for costs relating to publishing data and IT equipment investment. The cost of IT equipment was estimated based on UNECE data on: (i) the total cost to Member States of delivery of the 1990 and 2001 census rounds; as well as (ii) the

[70] Note that only five Member State NSIs provided an estimate of the cost of IT and infrastructure incurred. Estimates were provided for costs incurred in 2005, 2010, 2015, 2021 and 2025. Costs included in this analysis were average annual costs. The baseline estimate for IT costs incurred was calculated based on the average of the estimates provided for 2005 and 2010 for demographic data, and for 2005 only for migration data, due to the difference in when the respective Regulations were introduced. Portugal was excluded from the baseline calculation since the estimate was provided for 2007 rather than 2005 and was unusually high, and therefore skewed the average cost estimated.

[71] Available here: https://ec.europa.eu/eurostat/web/european-statistical-system/governance-bodies/essc.

[72] UNECE (2014) Measuring population and housing – Practices of UNECE countries in the 2010 round of censuses, available at: https://unece.org/DAM/stats/publications/2013/Measuring_population_and_housing_2010.pdf; UNECE (2008) Measuring population and housing - Practices of UNECE countries in the 2000 round of censuses, available at: https://unece.org/DAM/stats/publications/Publication_on_2000_censuses.pdf.

proportion of this budget that was spent on IT[73], assuming Eurostat's budget to be 20% of that spent by Member States before the implementation of the Census Regulation.

All costs were then aggregated. For simplicity[74], all ongoing costs were aggregated and presented as average annual costs, over the number of years pertaining to the baseline, or post-Census Regulation time period. For Eurostat this was 18 and 13 years, respectively i.e. 1990-2008, and 2008-2021[75]. For NSIs this was 15 years for both the period before and after the introduction of the Census Regulation, since costs were estimated by census round with two rounds in each period.

Estimation of costs for national authorities

Costs to national authorities were estimated by taking the following steps.

- Firstly, the data on per capita, and total[76] costs associated with the delivery of the 2001 and 2011 census rounds per Member State were extracted from the UNECE report, alongside information on the type of census conducted in each Member State (i.e. the census methodology: traditional, register-based or combined)[77].

[73] It was assumed that 8% of the overall budget was spent on IT equipment in 1990 and 9% in 2001. This is relative to the estimated 10.5% of overall MS budget spent on equipment, assuming Eurostat requires less equipment than MS and due to the trend of increased use of IT/technology to support censuses.

[74] Some costs varied in the number of years in which they were incurred due to the nature of the cost e.g. IT costs were incurred from 2007 and staff costs from 2012, as set out by Eurostat data. In some cases, ongoing costs were estimated to have been incurred for only the year in which the census was delivered, and a specific number of years before/after this. This was because some costs, such as monitoring costs in the years before the Census Regulation, would only be incurred during the delivery of the census itself.

[75] For simplicity, the number of years between the first census round considered and the year of implementation (2008) of the Census Regulation were counted as the 'baseline' years, despite the fact that this was a longer period than the period after the introduction of the Census Regulation. This is a robust assumption for some costs, where total values were estimated to have been incurred only in the years before or after the Census Regulation. However, in other cases (e.g. costs drawing from the UNECE estimates) total costs were estimated 'per census' and therefore the annual average cost difference between the baseline and post-Census Regulation period may be overestimated.

[76] Note that overall costs were not made available for the 2000 census in the UNECE reports. These overall costs were therefore calculated from the per capita estimates by multiplying these by the population in each Member State in 2000. Data extracted on 16/11/2021 17:56:32 from ESTAT. https://ec.europa.eu/eurostat/databrowser/view/DEMO_PJAN__custom_1585710/default/table?lang=en.

[77] Per capita costs had been translated to purchasing-power-parity (PPP) equivalents within the UNECE report. However, these figures were not used in our analysis, as these would adjust costs to account for the relative value in each Member State, whereas our analysis aimed to provide an overarching view of costs, from a 'union' perspective. Costs were presented in the UNECE reports in US dollars so were adjusted to 2021 EUR using the Consumer Price Index for all urban consumers from the US Bureau of Labor Statistics (available here: https://data.bls.gov/pdq/SurveyOutputServlet) and an exchange rate of 1 USD = 0.8833 EUR (exchange rate from Bloomberg on the 17/11/2021), available here: bloomberg.com/quote/USDEUR:CUR.

- Secondly, based on these figures, the total, median[78] and average cost of delivering the 2001 and 2011 census rounds were calculated, by type of census methodology.
- Thirdly, estimates were developed for the cost of delivering the 1990 and 2021 census rounds, based on: (i) 2001 and 2011 cost data by census methodology; as well as (ii) the trend in the number of Member States adopting each census methodology over time. Key assumptions[79] included:
    - for the 1991 census: all Member States used traditional census methodologies, and overall costs were 20% higher than in 2001 in line with the overall trend towards cost reduction;
    - for the 2021 census: more Member States (15 in total) delivered a register-based census and fewer delivered traditional or combined censuses (8 and 4, respectively), which meant that overall costs were 20% lower than in 2011.
- Fourthly, the estimated average cost by census methodology type in 2001 (for the 1991 estimate) and 2011 (for the 2021 estimate) was multiplied by the number of Member States assumed to have implemented each methodology, as well as the percentage cost reduction. Costs by methodology were then aggregated into an overall cost estimate for each round[80].
- Fifthly, compliance costs related to the monitoring and reporting on the quality of data sent to Eurostat were then added to these estimates, as it was assumed they were not included in the UNECE data. This cost was estimated using the average yearly salary of a public sector official in 2020 prices, and multiplying this by the

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78 This was calculated because, as stated in the UNECE reports, average values across all Member States were often skewed by outliers with extremely high or low costs. For consistency, total costs are used for most of the cost analysis, since costs associated with annual population statistics were calculated as total costs to all Member States. However, it is important to note that, at the median, overall costs decreased between 2001 and 2011, whereas average costs increased, highlighting that the presence of strong outliers are a possible limitation in the cost estimates. For example, it could be argued that certain Member States should be excluded from the analysis due to their being an outlier. France was excluded from this analysis due to the fact that it chose to implement a rolling census, associated with higher costs, a decision which arguably was not caused by the changes introduced by the Census Regulation.

79 Assumptions based on ICF interpretation of information from UNECE (2014) Measuring population and housing - Practices of UNECE countries in the 2010 round of censuses; available at https://unece.org/DAM/stats/publications/2013/Measuring_population_and_housing_2010.pdf and UNECE (2008) Measuring population and housing - Practices of UNECE countries in the 2000 round of censuses, available at: https://unece.org/DAM/stats/publications/Publication_on_2000_censuses.pdf.

80 Note that some estimates for the cost to Member States of delivering the 2021 census were provided in the Eurostat cost survey of Member States as well as the NSI survey. With regards to the former, the total and average values of all responses estimating the sum of direct and indirect costs of the 2021 census were used to check the values estimated using this method. Values for 2021 were found to be relatively similar (i.e. estimating a total cost of EUR 1.8bn rather than EUR1.6bn, and an average value of EUR 79m rather than EUR 108m). However, it is important to note that cost survey data may not be reliable or consistent, since some MS reported annual costs and others may have reported total costs of delivering the census (over many years). However, the average costs estimated by respondents to the NSI survey were much lower than those estimated using UNECE data, for 2011 (i.e. EUR 9m rather than more than EUR 130m). This may be due to the fact that only 15 MS provided an estimate, and these may have been an underestimate as they only included the NSI's operational budget for census delivery, which may not include all cost types considered by the UNECE.

assumed number of FTEs and level of effort incurred. It was assumed that these prices were incurred over the year of the census and the 5 subsequent years.

- Sixthly, overall baseline and post-Census Regulation costs were calculated by aggregating costs to all Member States assumed to have been incurred in the 1991 and 2001 census rounds and those in the 2011 and 2021 rounds, respectively. The former costs were subtracted from the latter to estimate the incremental cost. All costs were then presented as annual averages, as stated above.
- Note that due to the manner through which these costs were estimated (i.e. the fact they were drawn from UNECE data) it was not possible to estimate one-off and recurring costs separately, since these data were not available. For this reason, costs to Member States were presented as the overall annual average cost of delivering the census.

Overview of costs and benefits

Overview of costs and benefits identified in the evaluation

I. Overview of costs (in thousands of 2021 EUR, rounded to the nearest 1 000) and benefits identified in the evaluation							
		NSIs/Member States		**Eurostat/ the EU**		**Citizens/TCNs**	**Non-institutional data users**
		Qualitative	Monetary	Qualitative	Monetary	Qualitative	Qualitative
Census	One-off costs	Set-up costs (including changing census methodology)	Not estimated	Regulatory costs related to preparing and drafting the new Regulation Design, delivery and communication of training to staff	83	N/a	N/a
	Recurring costs (average annual)	Administrative costs for delivery, including enumeration, general preparations, logistics, processing, checking and coding data, and publication IT and equipment costs	25 785	Provision of financial support Monitoring and publishing costs IT equipment costs Administrative costs required to design and implement new processes	522	Time required to participate in census rounds	N/a
	Benefits	Increased staff skills and greater ownership over the data-collection process Increased quality and timeliness of statistics Benefits related to improved policymaking Increased ability to meet both user needs, and evolving policy needs Increased access to detailed statistics to feed into decision-making	Not estimated	Reduced administrative burden related to coordination of voluntary data Improved ability to meet user needs and adapt to evolving policy needs Increased access to reliable, detailed and high-quality statistics	Not estimated	Improved awareness of, and engagement with data Benefits associated with improved policy Improved access to open data and evidence (including accurate media reporting)	Increased access to detailed statistics and ability to conduct research
Migration	One-off costs	Administrative costs associated with adapting a national definition	145	Regulatory costs related to preparing and drafting the new regulation	1 001	N/a	N/a

		Administrative costs associated with the delivery of training and guidance		Enforcement costs related to monitoring, developing and submitting reports on statistics compiled			
	Recurring costs (average annual)	Compliance costs associated with adopting legislation and monitoring and reporting on compliance with this legislation Enforcement costs related to monitoring and reporting on the use of probable effect of estimates Administrative costs related to the design and implementation of the programme to collect data IT equipment costs	3 807	Compliance costs associated with the ESSC Provision of financial support Monitoring and publishing costs IT equipment costs	217	Provision and update of data to national authority owners Acceptance of loss of privacy	N/a
	Benefits	Increased staff skills and greater ownership over the data-collection process Increased understanding of migration-related issues across the EU, and associated reputational gains from improved policymaking Increased ability to meet both user needs and evolving policy needs Increased access to detailed statistics to feed into decision-making	Not estimated	Improved policymaking and associated reputational benefits Reduced administrative burden related to coordination of voluntary data Improved ability to meet user needs and adapt to evolving policy needs Increased access to reliable, detailed and high-quality statistics	Not estimated	Improved migration policy at the EU and MS level Improved access to open data and evidence (including accurate media reporting)	Increased access to comparable, reliable migration data across the EU and ability to produce comparative analyses
Demography	One-off costs	Administrative costs associated with deciding on a national definition and aligning regional definitions Administrative costs associated with the	3 878	Regulatory costs related to preparing and drafting the new Regulation Enforcement costs relating to processes required to develop reports on	101	N/a	N/a

	delivery of training and guidance		implementation of the Regulation			
Recurring costs (average annual)	Compliance costs associated with adopting legislation and monitoring, and reporting on compliance with this legislation Administrative costs related to the design and implementation of the programme to collect data IT equipment costs Enforcement costs relating to monitoring and reporting on the feasibility of the use of definitions as well as on reference metadata	8 640	Compliance costs associated with the ESSC Provision of financial support Monitoring and publishing costs IT equipment costs	165	Provision and update of data to national authority owners Acceptance of loss of privacy	N/a
Benefits	Increased staff skills and greater ownership over the data-collection process Improved ability to coordinate with national authorities Increased ability to meet both user needs and evolving policy needs Increased access to detailed statistics to feed into decision-making	Not estimated	Improved ability to make informed policy decisions and associated reputational gains Reduced administrative burden related to coordination of voluntary data Improved ability to meet user needs and adapt to evolving policy needs Increased access to reliable, detailed and high-quality statistics	Not estimated	Improved policy at the EU and MS level Improved access to open data and evidence (including accurate media reporting)	Increased access to comparable and reliable population data, and ability to produce comparative analyses

ANNEX 3: STATISTICAL DATASETS OF EUROPEAN STATISTICS ON POPULATION PUBLISHED UNDER THE INTERVENTION

Abbreviations of legal bases

CR	**Regulation (EC) No 763/2008 (Census Regulation)**
CIR-11	Regulation (EU) No 519/2010[81] (Census 2011 implementing Regulation)
CIR-21	Regulation (EU) 2017/712[82] (Census 2021 implementing Regulation)
DR	**Regulation (EU) No 1260/2012 (Demography Regulation)**
DIR	Regulation (EU) No 205/2014[83] (Demography implementing Regulation)
MR	**Regulation (EC) No 862/2007 (Migration Regulation)**
MIR	Regulation (EU) No 351/2010[84] (Migration implementing Regulation)

[81] Commission Regulation (EU) No 519/2010 of 16 June 2010 adopting the programme of the statistical data and of the metadata for population and housing censuses provided for by Regulation (EC) No 763/2008 of the European Parliament and of the Council (Text with EEA relevance) (OJ L 151, 17.6.2010, p. 1).

[82] Commission Regulation (EU) 2017/712 of 20 April 2017 establishing the reference year and the programme of the statistical data and metadata for population and housing censuses provided for by Regulation (EC) No 763/2008 of the European Parliament and of the Council (Text with EEA relevance) (OJ L 105, 21.4.2017, p. 1).

[83] Commission Implementing Regulation (EU) No 205/2014 of 4 March 2014 laying down uniformed conditions for the implementation of Regulation (EU) No 1260/2013 of the European Parliament and the Council on European demographic statistics, as regards breakdowns of data, deadlines and data revisions (Text with EEA relevance) (OJ L 65, 5.3.2014, p. 10).

[84] Commission Regulation (EU) No 351/2010 of 23 April 2010 implementing Regulation (EC) No 862/2007 of the European Parliament and of the Council on Community statistics on migration and international protection as regards the definitions of the categories of the groups of country of birth, groups of country of previous usual residence, groups of country of next usual residence and groups of citizenship (Text with EEA relevance) (OJ L 104, 24.4.2010, p. 37).

Dataset	Type of data collection	Legal basis	Description	Time series since	Publication and updates
1. 2011 EU CENSUS PROGRAMME					
1.1. DATASETS ON PERSONS					
Groups 1 – 4[85]	Mandatory	CR Art. 5(3) impl. by CIR-11 Annex I	**Population by NUTS 2 region, sex, household status, current activity status (low details), place of birth (low details), citizenship (low details), 5-year age group** and – legal marital status (group 1) – educational attainment (group 2) – employment status (group 3) – locality size (group 4)	n/a	By 31 March 2014 (27 months after census reference year)
Groups 6 – 9	Mandatory	CR Art. 5(3) impl. by CIR-11 Annex I	**Population by NUTS 2 region, sex, family status (high details), current activity status (low details), place of birth (medium details), country of citizenship (medium details), 5-year age group** and – legal marital status (group 6) – educational attainment (group 7) – employment status (group 8) – locality size (group 9)	n/a	By 31 March 2014 (27 months after census reference year)
Group 10	Mandatory	CR Art. 5(3) impl. by CIR-11 Annex I	**Population by NUTS 2 region, sex, occupation, industry (high details), current activity status (high details), education and 5-year age group**	n/a	By 31 March 2014 (27 months after census reference year)
Group 11	Mandatory	CR Art. 5(3) impl. by CIR-11 Annex I	**Population by NUTS 2 region, sex, status in employment, occupation, industry (high details), current activity status (low details), country of citizenship (low details), 5-year age group**	n/a	By 31 March 2014 (27 months after census reference year)
Group 12	Mandatory	CR Art. 5(3) impl. by CIR-11 Annex I	**Population by NUTS 2 region, sex, size of the locality, status in employment, place of usual residence one year prior to the census, current activity status (low details), country of citizenship (low details), 5-year age group**	n/a	By 31 March 2014 (27 months after census reference year)
Groups 13-14	Mandatory	CR Art. 5(3) impl. by CIR-11 Annex I	Population by NUTS 2 region, sex, education, current activity status (low details), country of citizenship (low details), 5-year	n/a	By 31 March 2014 (27 months after census reference year)

[85] 2011 EU census outputs are published as an interactive table builder tool querying these dataset groups at https://ec.europa.eu/CensusHub2.

Dataset	Type of data collection	Legal basis	Description	Time series since	Publication and updates
			age group and: – occupation (group 13) – industry (high details) (group 14)		
Groups 15-16	Mandatory	CR Art. 5(3) impl. by CIR-11 Annex I	**Population by NUTS 2 region, sex, current activity status (low details), occupation, industry (high details), 5-year age group** and: – country/place of birth (medium details) (group 15) – country of citizenship (medium details) (group 16)	n/a	By 31 March 2014 (27 months after census reference year)
Group 17	Mandatory	CR Art. 5(3) impl. by CIR-11 Annex I	**Population by NUTS 2 region, sex, current activity status (low details), place of usual residence one year prior to the census, occupation, industry (high details), country of citizenship (low details), 5-year age group**	n/a	By 31 March 2014 (27 months after census reference year)
Group 18	Mandatory	CR Art. 5(3) impl. by CIR-11 Annex I	**Population by NUTS 2 region, sex, current activity status (high details), legal marital status, country of citizenship (low details), 5-year age group**	n/a	By 31 March 2014 (27 months after census reference year)
Group 19	Mandatory	CR Art. 5(3) impl. by CIR-11 Annex I	**Population by location of place of work, sex, occupation, industry (high details), education, country of citizenship (low details), 5-year age group**	n/a	By 31 March 2014 (27 months after census reference year)
Group 20	Mandatory	CR Art. 5(3) impl. by CIR-11 Annex I	**Population by location of place of work, sex, employment status, occupation, industry (high details), education, country of citizenship (low details), 5-year age group**	n/a	By 31 March 2014 (27 months after census reference year)
Groups 21-22	Mandatory	CR Art. 5(3) impl. by CIR-11 Annex I	**Population by location of place of work, sex, occupation, industry (high details), 5-year age group** and: – country/place of birth (medium details) (group 21) – country of citizenship (medium details) (group 22)	n/a	By 31 March 2014 (27 months after census reference year)
Groups 23-24	Mandatory	CR Art. 5(3) impl. by CIR-11 Annex I	**Population by NUTS 2 region, location of place of work, sex, education, country/place of birth (medium details), country of citizenship (medium details), 5-year age group** and: – occupation (group 23) – industry (high details) (group 24)	n/a	By 31 March 2014 (27 months after census reference year)
Group 25	Mandatory	CR Art. 5(3) impl. by CIR-11 Annex I	**Population by NUTS 2 region, sex, year of arrival in the country since 1980, country/place of birth (medium details), country of citizenship (medium details), current activity status (low details), 5-year age group**	n/a	By 31 March 2014 (27 months after census reference year)
Groups 26-27	Mandatory	CR Art. 5(3) impl. by CIR-11 Annex I	**Population by territory of the Member State, sex, current activity status (low details), year of arrival in the country since 2000, 5-year age group** and:	n/a	By 31 March 2014 (27 months after census reference year)

Dataset	Type of data collection	Legal basis	Description	Time series since	Publication and updates
			– country/place of birth (high details) (group 26) – country of citizenship (high details) (group 27)		
Group 28	Mandatory	CR Art. 5(3) impl. by CIR-11 Annex I	**Population by territory of the Member State, sex, country/place of birth (high details), country of citizenship (low details), current activity status (low details), 5-year age group**	n/a	By 31 March 2014 (27 months after census reference year)
Groups 29-30	Mandatory	CR Art. 5(3) impl. by CIR-11 Annex I	**Population by NUTS 2 region, sex, year of arrival in the country since 1980 (5-year interval), occupation, current activity status (low details), 5-year age group** and: – country/place of birth (medium details) (group 29) – country of citizenship (medium details) (group 30)	n/a	By 31 March 2014 (27 months after census reference year)
Groups 31-35	Mandatory	CR Art. 5(3) impl. by CIR-11 Annex I	**Population by NUTS 2 region, sex, year of arrival in the country since 1980 (5-year interval), current activity status (low details), 5-year age group** and: – industry (high details) (groups 31, 32) – country of citizenship (medium details) (groups 32, 33, 35) – employment status (group 33) – country/place of birth (medium details) (groups 31, 33, 34) – Education (groups 34, 35)	n/a	By 31 March 2014 (27 months after census reference year)
Groups 36-37	Mandatory	CR Art. 5(3) impl. by CIR-11 Annex I	**Population by territory of the Member State, sex, year of arrival in the country since 2000, occupation, education, current activity status (low details), 5-year age group** and: – country/place of birth (medium details) (group 36) – country of citizenship (medium details) (group 37)	n/a	By 31 March 2014 (27 months after census reference year)
Groups 38-39	Mandatory	CR Art. 5(3) impl. by CIR-11 Annex I	**Population by NUTS 2 region, sex, housing arrangements (low details), country/place of birth, country of citizenship, place of usual residence one year prior to the census, 5-year age group** and: – current activity status (low details) (group 38) – size of the locality (group 39)	n/a	By 31 March 2014 (27 months after census reference year)
Group 40	Optional	CR Art. 5(3) impl. by CIR-11 Annex I	**Population by NUTS 2 region, sex, housing arrangements, size of the locality and 5-year age group**	n/a	By 31 March 2014 (27 months after census reference year)
Group 42	Mandatory	CR Art. 5(3) impl. by CIR-11 Annex I	**Population by NUTS 2 region, sex, age (single year), household status (medium details) and family status (high details)**	n/a	By 31 March 2014 (27 months after census reference year)

Dataset	Type of data collection	Legal basis	Description	Time series since	Publication and updates
Groups 43-44	Mandatory	CR Art. 5(3) impl. by CIR-11 Annex I	**Population by NUTS 2 region, sex, age (single year), current activity status** and: – Occupation and industry (high details) (group 43) – Employment status, education, size of the locality (group 44)	n/a	By 31 March 2014 (27 months after census reference year)
Group 45	Mandatory	CR Art. 5(3) impl. by CIR-11 Annex I	**Population by NUTS 2 region, sex, age (single year), country/place of birth (medium details) and country of citizenship (medium details)**	n/a	By 31 March 2014 (27 months after census reference year)
Group 46	Mandatory	CR Art. 5(3) impl. by CIR-11 Annex I	**Population by NUTS 3 region, sex, legal marital status, place of usual residence one year prior to the census, country/place of birth (medium details), country of citizenship (medium details) and 5-year age group**	n/a	By 31 March 2014 (27 months after census reference year)
Group 47	Mandatory	CR Art. 5(3) impl. by CIR-11 Annex I	**Population by NUTS 3 region, sex, household status, legal marital status, country/place of birth (low details) , country of citizenship (low details) and 5-year age group**	n/a	By 31 March 2014 (27 months after census reference year)
Group 48	Mandatory	CR Art. 5(3) impl. by CIR-11 Annex I	**Population by NUTS 3 region, sex, 5-year age group and household status (high details)**	n/a	By 31 March 2014 (27 months after census reference year)
Group 50	Mandatory	CR Art. 5(3) impl. by CIR-11 Annex I	**Population by NUTS 3 region, sex, family status (low details), legal marital status, country/place of birth (low details), country of citizenship (low details) and 5-year age group**	n/a	By 31 March 2014 (27 months after census reference year)
Group 51	Mandatory	CR Art. 5(3) impl. by CIR-11 Annex I	**Population by NUTS 3 region, sex, 5-year age group and family status (high details)**	n/a	By 31 March 2014 (27 months after census reference year)
Group 55	Mandatory	CR Art. 5(3) impl. by CIR-11 Annex I	**Population by NUTS 3 region, sex and age (single year)**	n/a	By 31 March 2014 (27 months after census reference year)
Group 56	Mandatory	CR Art. 5(3) impl. by CIR-11 Annex I	**Population by NUTS 3 region, sex and 5-year age group**	n/a	By 31 March 2014 (27 months after census reference year)
1.2. DATASETS ON FAMILIES AND HOUSEHOLDS					
Group 52	Mandatory	CR Art. 5(3) impl. by CIR-11 Annex I	**Families by NUTS 3 region, type and size of family nucleus (high detail)**	n/a	By 31 March 2014 (27 months after census reference year)
Group 58	Mandatory	CR Art. 5(3) impl. by CIR-11 Annex I	**Families by municipality, type and size of family nucleus (low detail)**	n/a	By 31 March 2014 (27 months after census reference year)
Group 5	Mandatory	CR Art. 5(3) impl. by CIR-11 Annex I	**Private households by NUTS 2 region, type and size (high detail), and tenure status**	n/a	By 31 March 2014 (27 months after census reference year)
Group 49	Mandatory	CR Art. 5(3) impl. by CIR-11 Annex I	**Private households by NUTS 3 region, type and size (high detail)**	n/a	By 31 March 2014 (27 months after census reference year)

Dataset	Type of data collection	Legal basis	Description	Time series since	Publication and updates
Group 57	Mandatory	CR Art. 5(3) impl. by CIR-11 Annex I	**Private households by municipality, type and size (low detail)**	n/a	By 31 March 2014 (27 months after census reference year)
1.3. DATASETS ON DWELLINGS AND HOUSING ARRANGEMENTS					
Group 53	Mandatory	CR Art. 5(3) impl. by CIR-11 Annex I	**Conventional dwellings by NUTS 3 region, building type, occupancy status and construction period**	n/a	By 31 March 2014 (27 months after census reference year)
Group 60	Mandatory	CR Art. 5(3) impl. by CIR-11 Annex I	**Conventional dwellings by municipality, building type and occupancy status**	n/a	By 31 March 2014 (27 months after census reference year)
Group 41	Mandatory	CR Art. 5(3) impl. by CIR-11 Annex I	**Occupied conventional dwellings by NUTS 2 region, ownership type, number of occupants, building type, size, density standard, water supply system, toilet and bathing facilities, and type of heating**	n/a	By 31 March 2014 (27 months after census reference year)
Group 54	Mandatory	CR Art. 5(3) impl. by CIR-11 Annex I	**Occupied conventional dwellings by NUTS 3 region, building type, size, density standard and number of occupants**	n/a	By 31 March 2014 (27 months after census reference year)
Group 59	Mandatory	CR Art. 5(3) impl. by CIR-11 Annex I	**Living quarters by municipality and type**	n/a	By 31 March 2014 (27 months after census reference year)
2. **2021 EU CENSUS PROGRAMME**					
2.1. DATASETS ON PERSONS					
Group 1[86]	Mandatory	CR Art. 5(3) impl. by CIR-21 Annex I	**Population by territory of the Member State sex, age (single year), legal marital status (high details), household status (high details) and family status (high details)**	n/a	By 31 March 2024 (27 months after census reference year)
Group 2	Mandatory	CR Art. 5(3) impl. by CIR-21 Annex I	**Population by NUTS 3 regions, sex, 5-year age group, legal marital status (low details), household status (high details), family status (high details), housing arrangements, size of the locality**	n/a	By 31 March 2024 (27 months after census reference year)
Group 3	Mandatory	CR Art. 5(3) impl. by CIR-21 Annex I	**Population by LAU 2 regions, sex, 5-year age group, household status (medium details), legal marital status (low details)**	n/a	By 31 March 2024 (27 months after census reference year)
Group 4	Mandatory	CR Art. 5(3) impl. by	**Population by NUTS 2 regions, sex, age (single year), current**	n/a	By 31 March 2024 (27 months after

[86] 2021 EU census outputs will be published on an updated CensusHub version, similar to 2011 outputs (see footnote 4).

Dataset	Type of data collection	Legal basis	Description	Time series since	Publication and updates
		CIR-21 Annex I	**activity status (high details), occupation, education**		census reference year)
Group 5	Mandatory	CR Art. 5(3) impl. by CIR-21 Annex I	**Population by NUTS 2 regions, sex, 5-year age group, occupation, industry (low details), status in employment, education**	n/a	By 31 March 2024 (27 months after census reference year)
Group 6	Mandatory	CR Art. 5(3) impl. by CIR-21 Annex I	**Population by NUTS 2 regions, sex, 5-year age group, location of place of work, occupation, industry (low details), status in employment, education**	n/a	By 31 March 2024 (27 months after census reference year)
Group 7	Mandatory	CR Art. 5(3) impl. by CIR-21 Annex I	**Population by territory of the Member State, sex, 5-year age group, location of place of work, industry (low details), status in employment**	n/a	By 31 March 2024 (27 months after census reference year)
Group 8	Mandatory	CR Art. 5(3) impl. by CIR-21 Annex I	**Population by LAU 2 regions, sex, country of citizenship (low details), country/place of birth (low details)**	n/a	By 31 March 2024 (27 months after census reference year)
Group 9	Mandatory	CR Art. 5(3) impl. by CIR-21 Annex I	**Population by NUTS 3 regions, sex, 5-year age group, country of citizenship (low details), country/place of birth (high details), year of arrival in the country since 1980 (single year)**	n/a	By 31 March 2024 (27 months after census reference year)
Group 10	Mandatory	CR Art. 5(3) impl. by CIR-21 Annex I	**Population by NUTS 3 regions, sex, 5-year age group, current activity status (low details), country of citizenship (low details), country/place of birth (low details), year of arrival in the country since 2000**	n/a	By 31 March 2024 (27 months after census reference year)
Group 11	Mandatory	CR Art. 5(3) impl. by CIR-21 Annex I	**Population by NUTS 3 regions, sex, 5-year age group, country of citizenship (high details), year of arrival in the country since 1980 (low details)**	n/a	By 31 March 2024 (27 months after census reference year)
Groups 12-13	Mandatory	CR Art. 5(3) impl. by CIR-21 Annex I	**Population by NUTS 3 regions, sex, 5-year age group, country of citizenship (medium details), country/place of birth (medium details), place of usual residence one year prior to the census** and: - year of arrival in the country since 1980 (low details), employment status (group 12) - year of arrival in the country since 1980 (high details), housing arrangements (group 13)	n/a	By 31 March 2024 (27 months after census reference year)
Group 14	Mandatory	CR Art. 5(3) impl. by CIR-21 Annex I	**Population by NUTS 2 regions, sex, 5-year age group, current activity status (high details), country of citizenship (low details), country/place of birth (low details), year of arrival in the country since 1980 (low details), place of usual residence one year prior to the census, housing arrangements**	n/a	By 31 March 2024 (27 months after census reference year)
Group 15	Mandatory	CR Art. 5(3) impl. by CIR-21 Annex I	**Population by NUTS 2 regions, sex, 5-year age group, current activity status (low details), education, country of citizenship**	n/a	By 31 March 2024 (27 months after census reference year)

Dataset	Type of data collection	Legal basis	Description	Time series since	Publication and updates
			(low details), country/place of birth (low details), year of arrival in the country since 1980 (single year)		
Group 16	Mandatory	CR Art. 5(3) impl. by CIR-21 Annex I	**Population by NUTS 2 regions, sex, 5-year age group, occupation, country of citizenship (low details), country/place of birth (low details), year of arrival in the country since 1980 (low details), place of usual residence one year prior to the census**	n/a	By 31 March 2024 (27 months after census reference year)
Group 17	Mandatory	CR Art. 5(3) impl. by CIR-21 Annex I	**Population by NUTS 2 regions, sex, 5-year age group, industry (high details), country of citizenship (low details), year of arrival in the country since 1980 (low details), place of usual residence one year prior to the census**	n/a	By 31 March 2024 (27 months after census reference year)
Group 18	Mandatory	CR Art. 5(3) impl. by CIR-21 Annex I	**Population by NUTS 2 regions, sex, industry (high details), status in employment, education, country of citizenship (low details), country/place of birth (low details)**	n/a	By 31 March 2024 (27 months after census reference year)
Groups 19-20	Mandatory	CR Art. 5(3) impl. by CIR-21 Annex I	**Population by NUTS 2 regions, sex, 5-year age group, country/place of birth (low details)** and: - education, year of arrival in the country since 1980 (low details) (group 19) - country of citizenship (low details), location of place of work (group 20)	n/a	By 31 March 2024 (27 months after census reference year)
Group 21	Mandatory	CR Art. 5(3) impl. by CIR-21 Annex I	**Population by NUTS 2 regions, sex, 5-year age group, legal marital status (low details), family status (medium details), household status (high detail), current activity status (high detail), education**	n/a	By 31 March 2024 (27 months after census reference year)
Group 22	Mandatory	CR Art. 5(3) impl. by CIR-21 Annex I	**Population by NUTS 2 regions, sex, 5-year age group, household status (high detail), education, status in employment**	n/a	By 31 March 2024 (27 months after census reference year)
Groups 23-24	Mandatory	CR Art. 5(3) impl. by CIR-21 Annex I	**Population by NUTS 2 regions, sex, 5-year age group, family status (low details), current activity status (low detail)** and: - Household status (low details), education (group 23) - Legal marital status (low detail), household status (medium details) (group 24)	n/a	By 31 March 2024 (27 months after census reference year)
Groups 25-26	Mandatory	CR Art. 5(3) impl. by CIR-21 Annex I	**Population by NUTS 3 regions, sex, 5-year age group, household status (medium details), country of citizenship (low details), country/place of birth (low details)** and: - Legal marital status (low details) (group 25) - Family status (low details) (group 26)	n/a	By 31 March 2024 (27 months after census reference year)

Dataset	Type of data collection	Legal basis	Description	Time series since	Publication and updates
Groups 27-28	Mandatory	CR Art. 5(3) impl. by CIR-21 Annex I	**Population by NUTS 3 regions, sex, family status (medium details), household status (medium details)** and: - 15-year age group, year of arrival in the country since 1980 (low details) (group 27) - 5-year age group, place of usual residence one year prior to the census (group 28)	n/a	By 31 March 2024 (27 months after census reference year)
Groups 29-30	Mandatory	CR Art. 5(3) impl. by CIR-21 Annex I	**Population by NUTS 2 regions, sex, 5-year age group, legal marital status (low details), family status (low details), household status (medium details), current activity status (low details)** and: - Country/place of birth (low details) (group 29) - Country of citizenship (low details) (group 30)	n/a	By 31 March 2024 (27 months after census reference year)
Groups 31-32	Mandatory	CR Art. 5(3) impl. by CIR-21 Annex I	**Population by NUTS 2 regions, sex, 5-year age group, family status (low details), household status, status in employment, education** and: - Country/place of birth (low details) (group 31) - Country of citizenship (low details) (group 32)	n/a	By 31 March 2024 (27 months after census reference year)
2.2. **DATASETS ON FAMILIES AND HOUSEHOLDS**					
Group 34	Mandatory	CR Art. 5(3) impl. by CIR-21 Annex I	**Families by NUTS 3 region, type and size of family nucleus (high details)**	n/a	By 31 March 2024 (27 months after census reference year)
Group 36	Mandatory	CR Art. 5(3) impl. by CIR-21 Annex I	**Families by municipality, type and size of family nucleus (low details)**	n/a	By 31 March 2024 (27 months after census reference year)
Group 33	Mandatory	CR Art. 5(3) impl. by CIR-21 Annex I	**Private households by NUTS 3 region, type, size and tenure status**	n/a	By 31 March 2024 (27 months after census reference year)
Group 35	Mandatory	CR Art. 5(3) impl. by CIR-21 Annex I	**Private households by municipality, type and size**	n/a	By 31 March 2024 (27 months after census reference year)
2.3. **DATASETS ON DWELLINGS AND HOUSING ARRANGEMENTS**					
Group 37	Mandatory	CR Art. 5(3) impl. by CIR-21 Annex I	**Conventional dwellings by NUTS 3 region, building type, occupancy status and construction period**	n/a	By 31 March 2024 (27 months after census reference year)
Group 38	Mandatory	CR Art. 5(3) impl. by CIR-21 Annex I	**Conventional dwellings by municipality, building type and occupancy status**	n/a	By 31 March 2024 (27 months after census reference year)
Group 39	Mandatory	CR Art. 5(3) impl. by CIR-21 Annex I	**Occupied conventional dwellings by NUTS 3 region, building type, size, density standard, ownership type and number of**	n/a	By 31 March 2024 (27 months after census reference year)

Dataset	Type of data collection	Legal basis	Description	Time series since	Publication and updates
			occupants		
Group 40	Mandatory	CR Art. 5(3) impl. by CIR-21 Annex I	**Occupied conventional dwellings by NUTS 2 region, water supply system, toilet and bathing facilities, and type of heating**	n/a	By 31 March 2024 (27 months after census reference year)
Group 41	Mandatory	CR Art. 5(3) impl. by CIR-21 Annex I	**Living quarters by municipality and type**	n/a	By 31 March 2024 (27 months after census reference year)
3. DEMOGRAPHY, POPULATION STOCK AND BALANCE					
3.1. MAIN POPULATION INDICATORS					
demo_gind	Mandatory and indicators calculated by Eurostat	DR Art. 3 impl. by DIR Art. 4(1-2)	**Population change - Demographic balance and crude rates at national level** Population on 1 January – total and by sex Average population – total and by sex Population as a percentage of EU population Total population change Natural change of population Live births – total and by sex Deaths – total and by sex Net migration plus statistical adjustment Sum of births and deaths (natural turnover) Sum of immigration and emigration plus statistical adjustment (migration turnover plus statistical adjustment) Sum of population changes (population turnover) Crude rate of total population change Crude birth rate Crude death rate Crude rate of natural change of population Crude rate of net migration plus statistical adjustment Crude rate of sum of births and deaths (crude rate of natural turnover) Crude rate of sum of population changes (crude rate of population turnover) Crude rate of the sum of immigration and emigration plus statistical adjustment (Crude Rate of migration turnover plus statistical adjustment)	1960	Twice per year (February/March and July) and in case of data updates by the countries

Dataset	Type of data collection	Legal basis	Description	Time series since	Publication and updates
demo_r_gind3	Mandatory and indicators calculated by Eurostat	DR Art. 3 impl. by DIR Art. 4(2)	**Population change - Demographic balance and crude rates at regional level (NUTS 3)** Population on 1 January - total Live births - total Deaths - total Total population change Natural change of population Net migration plus statistical adjustment Crude birth rate Crude death rate Crude rate of total population change Crude rate of natural change of population Crude rate of net migration plus statistical adjustment	2000	Once per year (February/March) and in case of data updates by the countries
demo_pjanind	Indicators calculated by Eurostat	-	**Population structure indicators at national level** Proportion of population by age groups Median age of population – total and by sex Age dependency ratio - variants Old-age dependency ration - variants Young-age dependency ratio Women per 100 men	1960	Once per year (February/March) and in case of data updates by the countries
demo_r_pjanind2	Indicators calculated by Eurostat	-	**Population structure indicators by NUTS 2 region** Proportion of population by age class Median age of population – total and by sex Age dependency ratio – variants Old-age dependency ratio - variants Young-age dependency ratio - variants Women per 100 men	1990	Once per year (February/March) and in case of data updates by the countries
demo_r_pjanind3	Indicators calculated by Eurostat	-	**Population structure indicators by NUTS 3 region** Proportion of population by age class Median age of population – total and by sex Age dependency ratio – variants Old-age dependency ratio - variants Young-age dependency ratio - variants Women per 100 men	2014	Once per year (February/March) and in case of data updates by the countries
demo_r_d3dens	Indicators calculated by Eurostat	-	**Population density by NUTS 3 region**	1990	Once per year (February/March) and in case of data updates by the countries

Dataset	Type of data collection	Legal basis	Description	Time series since	Publication and updates
demo_r_d3area	Voluntary	-	**Area by NUTS 3 region**	1990	Annual
3.2. POPULATION (NATIONAL LEVEL)					
demo_pjan	Mandatory	DR Art. 3(1) impl. by DIR Art. 4(2)	**Population on 1 January by age and sex**	1960	Once per year (February/March) and in case of data updates by the countries
demo_pjangroup	Mandatory	DR Art. 3(1) impl. by DIR Art. 4(2)	**Population on 1 January by age group and sex**	1960	Once per year (February/March) and in case of data updates by the countries
demo_pjanbroad	Mandatory	DR Art. 3(1) impl. by DIR Art. 4(2)	**Population on 1 January by broad age group and sex**	1960	Once per year (February/March) and in case of data updates by the countries
demo_pjanedu	Voluntary	-	**Population on 1 January by age, sex and educational attainment level**	2007	Once per year (February/March) and in case of data updates by the countries
demo_pjanmarsta	Voluntary	-	**Population on 1 January by age, sex and legal marital status**	1960	Once per year (February/March) and in case of data updates by the countries
migr_pop2ctz	Partly mandatory	MR Art. 3(1)(c)(i)	**Population on 1 January by age, sex and broad group of citizenship**	1998	Once per year (February/March) and in case of data updates by the countries
migr_pop1ctz	Partly mandatory	MR Art. 3(1)(c)(i)	**Population on 1 January by age group, sex and citizenship**	1998	Once per year (February/March) and in case of data updates by the countries
migr_pop3ctb	Partly mandatory	MR Art. 3(1)(c)(ii)	**Population on 1 January by age group, sex and country of birth**	1998	Once per year (February/March) and in case of data updates by the countries
migr_pop4ctb	Partly mandatory	MR Art. 3(1)(c)(ii)	**Population on 1 January by age, sex and broad group of country of birth**	1998	Once per year (February/March) and in case of data updates by the countries
migr_pop5ctz	Partly mandatory	MR Art. 3(1)(c)	**Population on 1 January by sex, citizenship and broad group of country of birth**	2009	Once per year (February/March) and in case of data updates by the countries
migr_pop6ctb	Partly mandatory	MR Art. 3(1)(c)	**Population on 1 January by sex, country of birth and broad group of citizenship**	2009	Once per year (February/March) and in case of data updates by the countries
migr_pop7ctz	Partly mandatory	MR Art. 3(1)(c)(i)	**Population on 1 January by age group, sex and level of human development of the country of citizenship**	2014	Once per year (February/March) and in case of data updates by the countries
migr_pop8ctb	Partly mandatory	MR Art. 3(1)(c)(ii)	**Population on 1 January by age group, sex and level of human development of the country of birth**	2014	Once per year (February/March) and in case of data updates by the countries
migr_pop9ctz	Partly mandatory	MR Art. 3(1)(c)(i)	**EU and EFTA citizens who are usual residents in another EU/EFTA country as of 1 January**	2016	Once per year (February/March) and in case of data updates by the countries
demo_urespop	Mandatory	DR Art. 4(1)	**Usually resident population on 1 January**	2014	Once per year (October); no updates are done

Dataset	Type of data collection	Legal basis	Description	Time series since	Publication and updates
3.3. POPULATION (REGIONAL LEVEL)					
demo_r_d2jan	Mandatory	DR Art. 3(1) impl. by DIR Art. 4(2)	**Population on 1 January by age, sex and NUTS 2 region**	1990	Once per year (February/March) and in case of data updates by the countries
demo_r_pjangroup	Mandatory	DR Art. 3(1) impl. by DIR Art. 4(2)	**Population on 1 January by age group, sex and NUTS 2 region**	1990	Once per year (February/March) and in case of data updates by the countries
demo_r_pjangrp3	Mandatory	DR Art. 3(1) impl. by DIR Art. 4(2)	**Population on 1 January by age group, sex and NUTS 3 region**	2014	Once per year (February/March) and in case of data updates by the countries
demo_r_pjanaggr3	Mandatory	DR Art. 3(1) impl. by DIR Art. 4(2)	**Population on 1 January by broad age group, sex and NUTS 3 region**	1990	Once per year (February/March) and in case of data updates by the countries
3.4. FERTILITY (NATIONAL LEVEL)					
demo_find	Indicators calculated by Eurostat	-	**Fertility indicators** Total fertility rate Median age of women at childbirth Mean age of women at childbirth Mean age of women at birth of first and higher order child Percentage first and higher order live births Proportion of live births outside marriage	1960	Once per year (February/March) and in case of data updates by the countries
demo_frate	Indicators calculated by Eurostat	-	**Fertility rates by age**	1960	Once per year (February/March) and in case of data updates by the countries
demo_fmonth	Mandatory	DR Art. 3(2)(a) impl. by DIR Art. 4(2-3)	**Live births (total) by month**	1960	Once per year (February/March) and in case of data updates by the countries
demo_fasec	Mandatory	DR Art. 3(2)(a) impl. by DIR Art. 4(2)	**Live births by mother's age and newborn's sex**	2007	Once per year (February/March) and in case of data updates by the countries
demo_fordagec	Mandatory	DR Art. 3(2)(a) impl. by DIR Art. 4(2)	**Live births by mother's age and birth order**	1960	Once per year (February/March) and in case of data updates by the countries
demo_fordager	Mandatory	DR Art. 3(2)(a) impl. by DIR Art. 4(2)	**Live births by mother's year of birth (age reached) and birth order**	1960	Once per year (February/March) and in case of data updates by the countries
demo_fagec	Voluntary	-	**Live births by mother's age and legal marital status**	1960	Once per year (February/March) and in case of data updates by the countries
demo_fager	Voluntary	-	**Live births by mother's year of birth (age reached) and legal marital status**	1960	Once per year (February/March) and in case of data updates by the countries
demo_faeduc	Voluntary	-	**Live births by mother's age and educational attainment level**	2007	Once per year (February/March) and in

Dataset	Type of data collection	Legal basis	Description	Time series since	Publication and updates
					case of data updates by the countries
demo_faemplc	Voluntary	-	**Live births by mother's age and activity status**	2007	Once per year (February/March) and in case of data updates by the countries
demo_faczc	Mandatory	-	**Live births by mother's age and citizenship**	2007	Once per year (February/March) and in case of data updates by the countries
demo_facbc	Mandatory	-	**Live births by mother's age and country of birth**	2007	Once per year (February/March) and in case of data updates by the countries
demo_fweight	Voluntary	-	**Live births by birth weight and duration of gestation**	2013	Once per year (February/March) and in case of data updates by the countries
demo_fabortind	Indicators calculated by Eurostat	-	**Abortion indicators** **Abortion rate and ratio**	2013	Once per year (February/March) and in case of data updates by the countries
demo_fabort	Voluntary	-	**Legally induced abortions by mother's age**	1960	Once per year (February/March) and in case of data updates by the countries
demo_fabortord	Voluntary	-	**Legally induced abortions by mother's age and number of previous live births**	2007	Once per year (February/March) and in case of data updates by the countries
3.5. FERTILITY (REGIONAL LEVEL)					
demo_r_find2	Indicators calculated by Eurostat	-	**Fertility indicators by NUTS 2 region** Total fertility rate Mean age of women at childbirth Median age of women at childbirth	1990	Once per year (February/March) and in case of data updates by the countries
demo_r_find3	Indicators calculated by Eurostat	-	**Fertility indicators by NUTS 3 region** Total fertility rate Mean age of women at childbirth Median age of women at childbirth	2013	Once per year (February/March) and in case of data updates by the countries
demo_r_frate2	Indicators calculated by Eurostat	-	**Fertility rates by age and NUTS 2 region**	1990	Once per year (February/March) and in case of data updates by the countries
demo_r_fagec	Mandatory	DR Art. 3(2)(a) impl. by DIR Art. 4(2)	**Live births by mother's age and NUTS 2 region**	1990	Once per year (February/March) and in case of data updates by the countries
demo_r_births	Mandatory	DR Art. 3(2)(a) impl. by DIR Art. 4(2)	**Live births (total) by NUTS 3 region**	1990	Once per year (February/March) and in case of data updates by the countries
demo_r_fagec3	Mandatory	DR Art. 3(2)(a) impl. by DIR Art. 4(2)	**Live births by age group of the mothers and NUTS 3 region**	2013	Once per year (February/March) and in case of data updates by the countries

Dataset	Type of data collection	Legal basis	Description	Time series since	Publication and updates
3.6. MORTALITY (NATIONAL LEVEL)					
demo_mexrt	Voluntary	-	**Excess mortality by month**	2020M1	Monthly
demo_mlifetable	Indicators calculated by Eurostat	-	**Life table by age and sex** Age specific death rate Life expectancy at given exact age Probability of dying between exact ages Probability of surviving between exact ages Person-years lived between exact age Number left alive at given exact age Total person-years lived above given exact age	1960	Once per year (February/March) and in case of data updates by the countries
demo_mlexpec	Indicators calculated by Eurostat	-	**Life expectancy by age and sex**	1960	Once per year (February/March) and in case of data updates by the countries
demo_mlexpecedu	Indicators calculated by Eurostat	-	**Life expectancy by age, sex and educational attainment level**	2007	Irregular
demo_mmonth	Mandatory	DR Art. 3(2)(b) impl. by DIR Art. 4(2-3)	**Deaths (total) by month**	1960	Once per year (February/March) and in case of data updates by the countries
demo_magec	Mandatory	DR Art. 3(2)(b) impl. by DIR Art. 4(2)	**Deaths by age and sex**	1960	Once per year (February/March) and in case of data updates by the countries
demo_mager	Mandatory	DR Art. 3(2)(b) impl. by DIR Art. 4(2)	**Deaths by year of birth (age reached) and sex**	1960	Once per year (February/March) and in case of data updates by the countries
demo_maeduc	Voluntary	-	**Deaths by age, sex and educational attainment level**	2007	Once per year (February/March) and in case of data updates by the countries
demo_marstac	Voluntary	-	**Deaths by age, sex and legal marital status**	2007	Once per year (February/March) and in case of data updates by the countries
demo_maczc	Mandatory	DR Art. 3(2)(b) impl. by DIR Art. 4(2)	**Deaths by age, sex and citizenship**	2007	Once per year (February/March) and in case of data updates by the countries
demo_macbc	Mandatory	DR Art. 3(2)(b) impl. by DIR Art. 4(2)	**Deaths by age, sex and country of birth**	2007	Once per year (February/March) and in case of data updates by the countries
demo_minfind	Indicators calculated by Eurostat	-	**Infant mortality rates**	1960	Once per year (February/March) and in case of data updates by the countries
demo_minf	Voluntary	-	**Infant mortality**	1960	Once per year (February/March) and in case of data updates by the countries

Dataset	Type of data collection	Legal basis	Description	Time series since	Publication and updates
demo_minfs	Voluntary	-	**Infant mortality by age and sex**	2007	Once per year (February/March) and in case of data updates by the countries
demo_minfedu	Voluntary	-	**Infant mortality by mother's educational attainment level (ISCED11f) and father's educational attainment level (ISCED11)**	2013	Once per year (February/March) and in case of data updates by the countries
demo_mfoet	Voluntary	-	**Late foetal deaths by mother's age**	2007	Once per year (February/March) and in case of data updates by the countries
3.7. MORTALITY (REGIONAL LEVEL)					
demo_r_mlife	Indicators calculated by Eurostat	-	**Life table by age, sex and NUTS 2 region** Age specific death rate Life expectancy at given exact age Number dying between exact ages Probability of dying between exact ages Probability of surviving between exact ages Person-years lived between exact age Number left alive at given exact age Total person-years lived above given exact age	1990	Once per year (February/March) and in case of data updates by the countries
demo_r_mlifexp	Indicators calculated by Eurostat	-	**Life expectancy by age, sex and NUTS 2 region**	1990	Once per year (February/March) and in case of data updates by the countries
demo_r_magec	Mandatory	DR Art. 3(2)(b) impl. by DIR Art. 4(2)	**Deaths by age, sex and NUTS 2 region**	1990	Once per year (February/March) and in case of data updates by the countries
demo_r_deaths	Mandatory	DR Art. 3(2)(b) impl. by DIR Art. 4(2)	**Deaths (total) by NUTS 3 region**	1990	Once per year (February/March) and in case of data updates by the countries
demo_r_magec3	Mandatory	DR Art. 3(2)(b) impl. by DIR Art. 4(2)	**Deaths by age group, sex and NUTS 3 region**	2013	Once per year (February/March) and in case of data updates by the countries
demo_r_minfind	Indicators calculated by Eurostat	-	**Infant mortality rates by NUTS 2 region**	1990	Once per year (February/March) and in case of data updates by the countries
demo_r_minf	Mandatory	DR Art. 3(2)(b) impl. by DIR Art. 4(2)	**Infant mortality by NUTS 2 region**	1990	Once per year (February/March) and in case of data updates by the countries
3.8. DEATHS BY WEEK – SPECIAL DATA COLLECTION					
demo_r_mwk_ts	Voluntary	-	**Deaths by week and sex**	2000W2	Continuous

Dataset	Type of data collection	Legal basis	Description	Time series since	Publication and updates
demo_r_mwk_20	Voluntary	-	**Deaths by week, sex and 20-year age group**	2000W1	Continuous
demo_r_mwk_10	Voluntary	-	**Deaths by week, sex and 10-year age group**	2000W2	Continuous
demo_r_mwk_05	Voluntary	-	**Deaths by week, sex and 5-year age group**	2000W1	Continuous
demo_r_mwk2_ts	Voluntary	-	**Deaths by week, sex and NUTS 2 region**	2000W1	Continuous
demo_r_mwk2_20	Voluntary	-	**Deaths by week, sex, 20-year age group and NUTS 2 region**	2000W1	Continuous
demo_r_mwk2_10	Voluntary	-	**Deaths by week, sex, 10-year age group and NUTS 2 region**	2000W1	Continuous
demo_r_mwk2_05	Voluntary	-	**Deaths by week, sex, 5-year age group and NUTS 2 region**	2000W1	Continuous
demo_r_mwk3_t	Voluntary	-	**Deaths by week and NUTS 3 region**	2000W6	Continuous
demo_r_mwk3_ts	Voluntary	-	**Deaths by week, sex and NUTS 3 region**	2000W1	Continuous
demo_r_mwk3_20	Voluntary	-	**Deaths by week, sex, 20-year age group and NUTS 3 region**	2000W5	Continuous
demo_r_mwk3_10	Voluntary	-	**Deaths by week, sex, 10-year age group and NUTS 3 region**	2000W1	Continuous
demo_r_mweek3	Voluntary	-	**Deaths by week, sex, 5-year age group and NUTS 3 region**	2000W4	Continuous
3.9. MARRIAGES					
demo_nind	Voluntary and indicators calculated by Eurostat	-	**Marriage indicators** Marriages Crude marriage rate Mean age at first marriage – males and females Total first marriage rate – males and females Proportion of first marriages – males and females	1960	Once per year (February/March) and in case of data updates by the countries
demo_nmsta	Voluntary	-	**Marriages by sex and previous marital status**	1960	Once per year (February/March) and in case of data updates by the countries
demo_nmsta2	Voluntary	-	**Marriages by previous legal union status of bride and groom**	2013	Once per year (February/March) and in case of data updates by the countries
demo_nsinagec	Voluntary	-	**First-time marrying persons by age and sex**	1990	Once per year (February/March) and in case of data updates by the countries
demo_nsinrt	Indicators calculated by Eurostat	-	**First marriage rates by age and sex**	1990	Once per year (February/March) and in case of data updates by the countries
demo_marcz	Voluntary	-	**Marriages by citizenship of bride and groom**	2012	Once per year (February/March) and in case of data updates by the countries
demo_marcb	Voluntary	-	**Marriages by country of birth of bride and groom**	2012	Once per year (February/March) and in case of data updates by the countries
3.10. DIVORCES					
demo_ndivind	Voluntary and	-	**Divorce indicators**	1960	Once per year (February/March) and in

Dataset	Type of data collection	Legal basis	Description	Time series since	Publication and updates
	indicators calculated by Eurostat		Divorces Crude divorce rate Divorces per 100 marriages		case of data updates by the countries
demo_ndivdur	Voluntary	-	Divorces by duration of marriage (reached during the year)	1990	Once per year (February/March) and in case of data updates by the countries
demo_divcz	Voluntary	-	**Divorces by citizenship of wife and husband**	2012	Once per year (February/March) and in case of data updates by the countries
demo_divcb	Voluntary	-	**Divorces by country of birth of wife and husband**	2012	Once per year (February/March) and in case of data updates by the countries
4. OTHER DEMOGRAPHIC DATASETS					
4.1. YOUTH POPULATION					
yth_demo_010	Derived dataset	n/a	**Child and youth population on 1 January by sex and age**	2008	Annual
yth_demo_020	Derived dataset	n/a	**Ratio of children and young people in the total population on 1 January by sex and age**	2009	Annual
yth_demo_060	Derived dataset	n/a	**Youth population on 1 January by sex, age and country of birth**	1998	Annual
4.2. DEMOGRAPHY BY TYPOLOGY OF REGION					
met_pjangrp3	Derived dataset	n/a	**Population on 1 January by five year age group, sex and metropolitan regions**	2014	Annual
met_pjanaggr3	Derived dataset	n/a	**Population on 1 January by broad age group, sex and metropolitan regions**	1990	Annual
met_gind3	Derived dataset	n/a	**Demographic balance and crude rates by metropolitan regions**	2000	Annual
met_births	Derived dataset	n/a	**Live births (total) by metropolitan regions**	1990	Annual
met_deaths	Derived dataset	n/a	**Deaths (total) by metropolitan regions**	1990	Annual
met_d3dens	Derived dataset	n/a	**Population density by metropolitan regions**	1990	Annual

Dataset	Type of data collection	Legal basis	Description	Time series since	Publication and updates
met_d3area	Derived dataset	n/a	**Area of the regions by metropolitan regions**	1990	Annual
urt_pjangrp3	Derived dataset	n/a	**Population on 1 January by five year age group, sex and other typologies**	2014	Annual
urt_pjanaggr3	Derived dataset	n/a	**Population on 1 January by broad age group, sex and other typologies**	1990	Annual
urt_gind3	Derived dataset	n/a	**Demographic balance and crude rates by other typologies**	2000	Annual
urt_births	Derived dataset	n/a	**Live births (total) by other typologies**	1990	Annual
urt_deaths	Derived dataset	n/a	**Deaths (total) by other typologies**	1990	Annual
urt_d3dens	Derived dataset	n/a	**Population density by other typologies**	1990	Annual
urt_d3area	Derived dataset	n/a	**Area of the regions by other typologies**	1990	Annual
4.3. DEMOGRAPHY OF CITIES AND FUNCTIONAL URBAN AREAS					
urb_cpop1	Derived dataset	n/a	**Population on 1 January by age groups and sex - cities and greater cities**	1989	Annual
urb_cpopstr	Derived dataset	n/a	**Population structure - cities and greater**	1989	Annual
urb_cpopcb	Derived dataset	n/a	**Population by citizenship and country of birth - cities and greater cities**	1990	Annual
urb_cfermo	Derived dataset	n/a	**Fertility and mortality - cities and greater cities**	1990	Annual
urb_lpop1	Derived dataset	n/a	**Population on 1 January by age groups and sex - functional urban areas**	1989	Annual
urb_lpopstr	Derived dataset	n/a	**Population structure - functional urban areas**	1989	Annual
urb_lpopcb	Derived dataset	n/a	**Population by citizenship and country of birth - functional urban areas**	1990	Annual
urb_lfermor	Derived dataset	n/a	**Fertility and mortality - functional urban areas**	1990	Annual
urb_cpopcb	Derived dataset	n/a	**Population by citizenship and country of birth - cities and greater cities**	1990	Annual

Dataset	Type of data collection	Legal basis	Description	Time series since	Publication and updates
urb_lpopcb	Derived dataset	n/a	**Population by citizenship and country of birth - functional urban areas**	1990	Annual
4.4. POPULATION OF CANDIDATE COUNTRIES AND POTENTIAL CANDIDATE COUNTRIES					
cpc_psdemo	Voluntary	n/a	**Candidate countries and potential candidates: population – demography**	2000	Annual
5. INTERNATIONAL MIGRATION AND CITIZENSHIP					
5.1. IMMIGRATION (MIGR_IMMI)					
migr_imm8	Partly mandatory	MR Art. 3(1)(a)	**Immigration by age and sex**	1990	Once per year (February/March) and in case of data updates by the countries
migr_imm1ctz	Partly mandatory	MR Art. 3(1)(a)(i)	**Immigration by age group, sex and citizenship**	1998	Once per year (February/March) and in case of data updates by the countries
migr_imm3ctb	Partly mandatory	MR Art. 3(1)(a)(ii)	**Immigration by age group, sex and country of birth**	2008	Once per year (February/March) and in case of data updates by the countries
migr_imm2ctz	Partly mandatory	MR Art. 3(1)(a)(i) impl. by MIR Annex 1.1	**Immigration by age, sex and broad group of citizenship**	1998	Once per year (February/March) and in case of data updates by the countries
migr_imm4ctb	Partly mandatory	MR Art. 3(1)(a)(ii) impl. by MIR Annex 1.2	**Immigration by age, sex and broad group of country of birth**	2008	Once per year (February/March) and in case of data updates by the countries
migr_imm6ctz	Voluntary	-	**Immigration by sex, citizenship and broad group of country of birth**	2008	Once per year (February/March) and in case of data updates by the countries
migr_imm7ctb	Voluntary	-	**Immigration by sex, country of birth and broad group of citizenship**	2008	Once per year (February/March) and in case of data updates by the countries
migr_imm5prv	Partly mandatory	MR Art. 3(1)(a)(iii) impl. by MIR Annex 1.3	**Immigration by age group, sex and country of previous residence**	1998	Once per year (February/March) and in case of data updates by the countries
migr_imm9ctz	Mandatory	MR Art. 3(1)(a)(i) impl. by MIR Annex 2	**Immigration by age group, sex and level of human development of the country of citizenship**	2013	Once per year (February/March) and in case of data updates by the countries
migr_imm10ctb	Mandatory	MR Art. 3(1)(a)(ii) impl. by MIR	**Immigration by age group, sex and level of human development of the country of birth**	2013	Once per year (February/March) and in case of data updates by the countries

Dataset	Type of data collection	Legal basis	Description	Time series since	Publication and updates
		Annex 2			
migr_imm11prv	Mandatory	MR Art. 3(1)(a)(iii) impl. by MIR Annex 2	**Immigration by age group, sex and level of human development of the country of previous residence**	2013	Once per year (February/March) and in case of data updates by the countries
migr_imm12prv	Voluntary	-	**Immigration by broad group of country of previous residence**	2013	Once per year (February/March) and in case of data updates by the countries
5.2. EMIGRATION (MIGR_EMI)					
migr_emi2	Partly mandatory	MR Art. 3(1)(b)(ii-iii)	**Emigration by age and sex**	1990	Once per year (February/March) and in case of data updates by the countries
migr_emi1ctz	Partly mandatory	MR Art. 3(1)(b)(i) impl. by MIR Annex 1.1	**Emigration by age group, sex and citizenship**	2008	Once per year (February/March) and in case of data updates by the countries
migr_emi4ctb	Voluntary	-	**Emigration by age group, sex and country of birth**	2008	Once per year (February/March) and in case of data updates by the countries
migr_emi3nxt	Partly mandatory	MR Art. 3(1)(b)(iv) impl. by MIR Annex 1.4	**Emigration by age group, sex and country of next usual residence**	1998	Once per year (February/March) and in case of data updates by the countries
migr_emi5nxt	Voluntary	-	**Emigration by broad group of country of next usual residence**	2013	Once per year (February/March) and in case of data updates by the countries
5.3. ACQUISITION AND LOSS OF CITIZENSHIP (MIGR_ACQN)					
migr_acqs	Mandatory	MR Art. 3(1)(d)	**Residents who acquired citizenship as a share of resident non-citizens by former citizenship and sex**	2009	Once per year (February/March) and in case of data updates by the countries
migr_acq	Partly mandatory	MR Art. 3(1)(d)	**Acquisition of citizenship by age group, sex and former citizenship**	1998	Once per year (February/March) and in case of data updates by the countries
migr_acq1ctz	Mandatory	MR Art. 3(1)(d)	**Acquisition of citizenship by age group, sex and level of human development of former citizenship**	2013	Once per year (February/March) and in case of data updates by the countries
migr_lct	Voluntary	-	**Loss of citizenship by sex and new citizenship**	2008	Once per year (February/March) and in case of data updates by the countries

ANNEX 4: COMPLETE EVALUATION FRAMEWORK

Evaluation criterion	Evaluation question		Indicator		Indicator results: Baseline	Target	Current	Information source(s): Statistics	Legal bases, metadata, other documentation	NSI survey	OPC	Contract study
Relevance (objectives vs problem/needs) - pre-2005 situation	RI1	To what extent do statistical objectives and outputs correspond to the needs for evidence-based EU policymaking?	RI1.1	Share of initial EU use cases addressed by domain-specific datasets	29%	100%	100%		X			
	RI2	To what extent do statistical objectives and outputs serve institutional needs for the functioning of the EU?	RI2.1	Suitability of the usual-residence definition based on a twelve-month rule vis-à-vis EU use cases	Poor	Optimal	Barely s.		X			
			RI2.2	Sensitivity of population quotas in Council voting to variations of total population counts used as input	Poor	Optimal	Decent	X	X			
			RI2.3	Utility of population and migration statistics for population projections	1.5	10	6.5		X			
Relevance evolution (objectives vs evolving needs) – current situation	RE1	To what extent do population statistics address current policy needs for detailed, frequent and harmonised data on population aspects, including at the highest geographic granularity?	RE1.1	Detail gaps of initial statistical objectives against current/new policy needs	Good	Good	Barely s.		X		X	
			RE1.2	Frequency gaps of initial statistical objectives against current/new policy needs	Good	Good	Decent		X		X	
			RE1.3	Timeliness gaps of initial statistical objectives against current/new policy needs	Good	Good	Decent		X		X	
			RE1.4	Harmonisation gaps of initial statistical objectives against current/new policy needs	Decent	Good	Barely s.		X	X	X	
			RE1.5	Geographic granularity gaps of initial statistical objectives against current/new policy needs	Good	Good	Barely s.		X		X	
	RE2	To what extent are established statistical objectives fit to respond to evolving policy needs?	RE2.1	Fitness of initial statistical objectives and legal bases to serve evolving policy needs	Poor	Optimal	Barely s.		X		X	

	RE3	Who are the main current users of European statistics on population and to what extent do the currently available European statistics on population meet their needs?	RE3.1	Identification of main types of users of European statistics on population							X
			RE3.2	Extent to which key users (including policymakers, public administrators, researchers, trade unions, students, civil society representatives, non-governmental organisations and citizens) agree that the currently available European statistics on population meet their needs (now and in the future)							X
			RE3.3	Key users' views on their needs that are not currently met							X
Effectiveness (outputs/results/impacts vs objectives)	EE1	To what extent is the output of high quality?	EE1.1	Overall quality of mandatory vs voluntary statistics published	Barely s.	Good	Good	X	X	X	
			EE1.2	Number of quality issues identified and non-resolved	Poor	Good	Decent		X		
	EE2	To what extent do statistics published under the intervention serve EU policymaking?	EE2.1	Share of EU aggregates provided in datasets (mandatory and voluntary)	42%	100%	84%	X			
			EE2.2	Complete coverage of EU population characteristics (share of 'unknown' in totals of mandatory datasets)	~0.1%	0%	~0.1%	X			
			EE2.3	Complete coverage of EU population characteristics (share of 'unknown' in totals of voluntary datasets)	~0.1%	0%	~0.7%	X			
	EE3	To what extent do statistics published under the intervention serve institutional needs for the functioning of the EU?	EE3.1	Accuracy and comparability of total population at national level delivered under Demography Regulation Article 4	17 MS	27 MS	22 MS	X	X		
			EE3.2	Overall availability of population statistics by policy topic	Poor	Good	Decent	X	X	X	
	EE4	What are the existing cooperation arrangements between NSIs and national authorities in charge of administrative data sources used for population statistics? How effective are those arrangements?	EE4.1	Legislative arrangements for cooperation between NSIs and national authorities in the selected MS							X
			EE4.2	Non-legislative/procedural arrangements for cooperation between NSIs and national authorities in the selected MS							X
			EE4.3	Data producers' views on the effectiveness of the existing							X

				cooperation arrangements and areas where cooperation could be streamlined/improved								
Efficiency (outputs/results/impacts vs inputs)	EI1	To what extent is the output compliant with legal requirements?	EI1.1	Number of compliance issues identified and followed up over the years	Poor	Optimal	Good		X			
	EI2	To what extent are voluntary data collections required to cover statistical needs?	EI2.1	Number of voluntary datasets serving key policy needs, compared to number of mandatory datasets	100%	0%	50%	X	X			
	EI3	How often are mandatory vs voluntary datasets accessed by users?	EI3.1	Access analytics to mandatory and voluntary datasets, compared to each other and to other Eurostat datasets	<50k/y	>50k/y	>100k/y		X		X	
	EI4	How efficient are existing cooperation arrangements between NSIs and national authorities in charge of administrative data sources used for population statistics?	EI4.1	Data producers' views on the efficiency of the existing cooperation arrangements and areas where the efficiency of existing arrangements could be improved								X
	EI5	What costs do data producers currently face to develop European statistics on population (i.e. baseline costs)?	EI5.1	Data producers' views on the main elements that give rise to costs								X
			EI5.2	Monetised costs (where possible), or indicative scale of costs where costs cannot be monetised								X
	EI6	What benefits do data users currently draw from European statistics on population (i.e. baseline benefits)?	EI6.1	Data users' views on the main elements that give rise to benefits								X
			EI6.2	Monetised benefits (where possible), or indicative scale of benefits where benefits cannot be monetised								X
Coherence – internal (objectives vs inputs)	CI1	To what extent do legal bases cover statistical objectives through mandatory data collections?	CI1.1	Number of datasets not covered by the legal base	45	<45	36		X		X	
	CI2	Is the current legal framework internally coherent?	CI2.1	Identification of main inconsistencies and gaps in the current legal framework governing European statistics on population								X

			CI2.2	Experts' and stakeholders' views on the main inconsistencies and gaps								X
			CI2.3	Number of provisions that are inconsistent								X
			CI2.4	Number of legislative gaps identified								X
Coherence - external (objectives vs external factors)	CE1	To what extent are population statistics coherent with related or depending other European statistics?	CE1.1	Cross-domain coherence of international migration vs asylum and managed-migration statistics	Poor	Good	Decent	X	X			
			CE1.2	Utility of census outputs as sampling frame for social surveys	Good	good	Decent	X	X			
			CE1.3	Utility of census/demography statistics for national accounts	Poor	Good	Decent	X	X			
			CE1.4	Cross-domain coherence of population in demography statistics and national accounts	<0.2%	0%	<0.2%	X	X			
			CE1.5	Cross-domain coherence of mortality with health statistics	<2%	0%	<2%	X	X			
	CE2	To what extent are EU concepts and definitions harmonised with international practices or recommendations?	CE2.1	Number of concepts/definitions deviating between EU and UNECE/CES over all common concepts/definitions					X			
			CE2.2	Coherence between European population statistics and EU/international demographic research activities					X			
	CE3	Is the current legal framework coherent with other EU policy and legislation, including the Charter on Fundamental Rights?	CE3.1	Identification of main inconsistencies and gaps between the current legal framework governing European statistics on population and wider EU policy and legislation, including the Charter on Fundamental Rights								X
			CE3.2	Experts' and stakeholders' views on the main inconsistencies and gaps								X
			CE3.3	Number of provisions that are inconsistent								X
			CE3.4	Number of legislative gaps identified								X
EU added value (of	EU1	To what extent is statistical quality	EU1.1	EU-level completeness of mandatory and voluntary statistics published	Barely s.	Optimal	Good		X		X	

outputs/results/impacts)		achieved at EU level?	EU1.2	EU-level comparability of mandatory and voluntary statistics published	Barely s.	Optimal	Good		X	X
	EU2	To what extent is methodological soundness at EU level (harmonisation of definitions and implementation) achieved by the intervention (incl. harmonisation gap of population bases)?	EU2.1	Use of definitions (feasibility studies and case studies)						X
			EU2.2	Implementation of definitions (feasibility studies and case studies)						X
			EU2.3	Economic value (desk research and case studies -> all stakeholders/by MS and entire EU, to augment EI7 and EI8)						X
	EU3	To what extent are the users satisfied?	EU3.1	User opinion on overall quality of European statistics	Good	Optimal	Good		X	X
Statistical quality (of outputs)	SQ1	Coherence	SQ1.1	Differences in population bases used	18 MS	27 MS	18 MS	X	X	
			SQ1.2	Consistency at national level between total population under DR Art. 4 and other annual population	17 MS	27 MS	22 MS	X		
			SQ1.3	Differences between aggregates across population tables	72%	100%	100%	X		
			SQ1.4	Differences between census and annual population during census years	N/A	100%	82%	X		
			SQ1.5	Differences between demographic changes and evolution of stocks	44%	100%	43%	X	X	
	SQ2	Comparability	SQ2.1	Differences at national level between total population under DR Article 4 and other annual population across MS	N/A	0%	<1.6%	X	X	
			SQ2.2	Differences between voluntary bilateral migration flows (country level asymmetries)	25%	100%	25%	X		
			SQ2.3	Differences between mandatory EU internal migration flows (EU-level asymmetry)	13.8%	0%	3.7%	X		
	SQ3	Accuracy	SQ3.1	Relative/absolute uncertainty (confidence interval) of outputs, as available in metadata	0 MS	27 MS	0 MS	X		
			SQ3.2	Number/share of suppressed cells in mandatory statistical outputs	N/A	0 MS	9 MS	X		

		SQ3.3	Coverage errors in statistical outputs, estimated share of target population if available	0 MS	27 MS	≤ 8 MS		X
		SQ3.4	Revisions of published statistics	N/A	<1%	1.4%	X	X
SQ4	Timeliness	SQ4.1	Development of time lag between reference date and European statistics published (EU complete and by MS)	552 days	<552 days	397 days		X
		SQ4.2	Timeliness of EU annual data compared to national and international practices for annual data	552 days	<552 days	397 days		
SQ5	Punctuality	SQ5.1	Development of time lag between agreed/legal deadline and European statistics published (EU complete and by MS)	294 days	0 days	31 days		X
SQ6	Relevance	SQ6.1	Completeness of mandatory statistics published	42.6%	100%	98.9%	X	
		SQ6.2	Completeness of voluntary statistics published	41.2%	100%	58.4%	X	