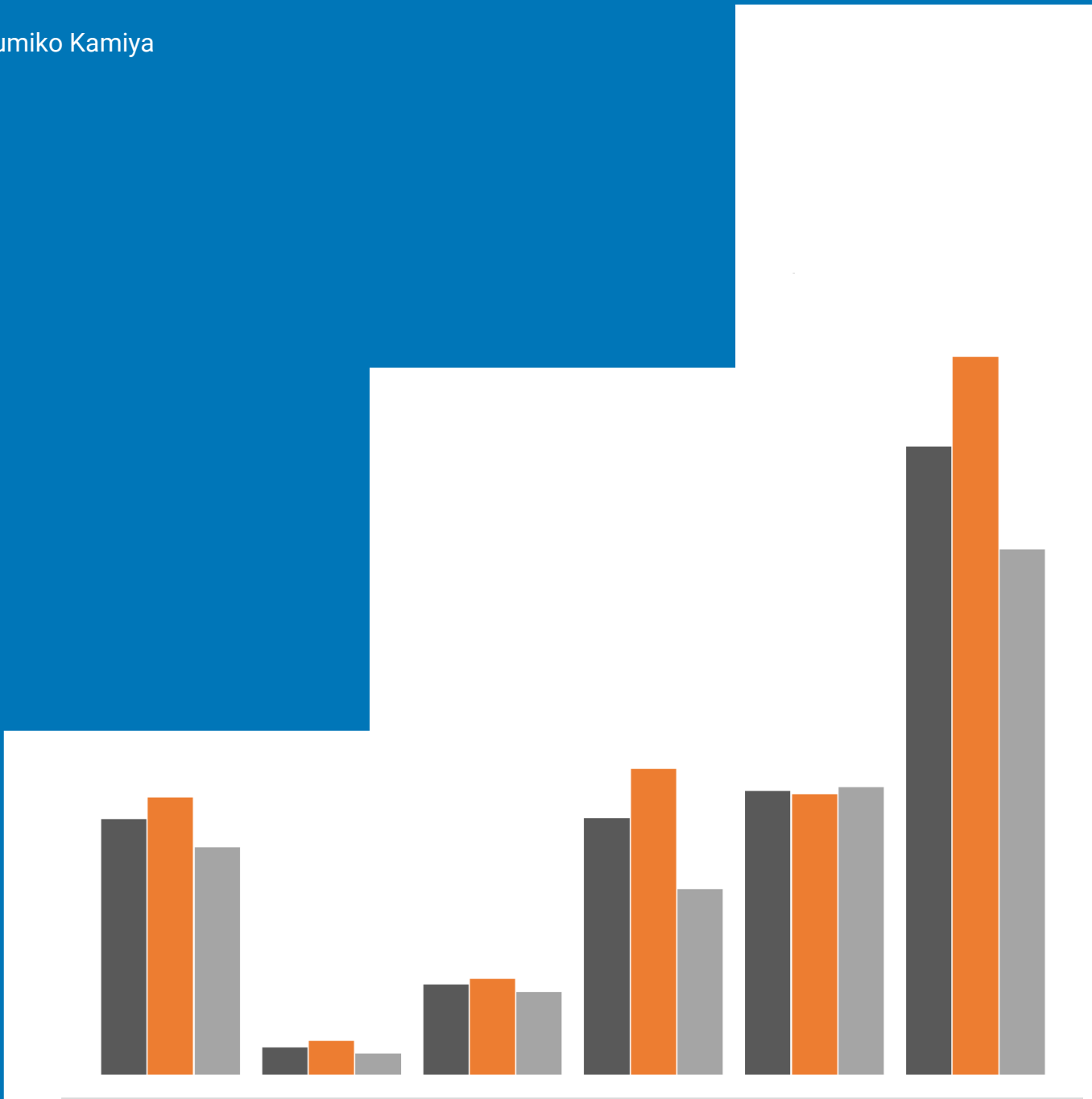




United Nations Database on Older Persons Living in Collective Living Arrangements

Technical Paper

Yumiko Kamiya



The Population Division of the Department of Economic and Social Affairs provides the international community with timely and accessible population data and analysis of population trends and development outcomes. The Division undertakes studies of population size and characteristics and of the three components of population change (fertility, mortality and migration).

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Yumiko Kamiya**

Abstract

Living arrangements of older people are an important determinant of their economic well-being, physical and psychosocial health, and life satisfaction. Research has found an association between mortality risks at older ages and an individual's living arrangements. Older persons living alone or in institutions, for example, have higher overall mortality risks than those cohabiting with a spouse or other family members. Furthermore, the living arrangements of older persons can also have important macroeconomic implications by shaping the demand for housing, social services, energy, water, and other resources. To support Governments in their efforts to get better insights into the living arrangements of older persons, the Population Division has expanded its work on living arrangements of older persons in collective living quarters, including institutions. This technical paper outlines the methodology employed in compiling the database and summarizes key findings regarding patterns and trends in older persons residing in collective living quarters.

Keywords: Living arrangements, older persons, collective living quarters, institutions.

Sustainable Development Goals: 1, 3 and 5

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** Population Division, United Nations Department of Economic and Social Affairs.

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EXPLANATORY NOTES

The following symbols have been used in the tables throughout this report:

A full stop (.) is used to indicate decimals.

References to countries, territories and areas:

The designations employed in this publication and the material presented in it do not imply the expression of any opinion whatsoever on the part of the Secretariat of the United Nations concerning the legal status of any country, territory, city or area or of its authorities, or concerning the delimitation of its frontiers or boundaries. The term “country” as used in this publication also refers, as appropriate, to territories or areas.

The following abbreviations have been used:

COVID-19	Coronavirus disease 2019
CLQ	Collective living quarters
CRAN	Comprehensive R Archive Network
DYB	Demographic Yearbook
UN DESA	United Nations Department of Economic and Social Affairs
UNECE	United Nations Economic Commission for Europe
SDGs	Sustainable Development Goals
WPP	World Population Prospects

I. INTRODUCTION

People are living longer lives, leading to a significant rise in both the absolute number and the share of older persons in the global population. While the number of older persons aged 65 years or older is projected to grow from 808 million in 2023 to 1.6 billion in 2050, the population aged 80 or over is projected to triple, from 160 million in 2023 to 459 million in 2050, and will account for almost 5 per cent of the world's population in 2050 (United Nations, 2022).

Population ageing is occurring alongside broader social and economic changes taking place throughout the world. Declines in fertility, changes in patterns of marriage, cohabitation and divorce, increased levels of education among younger generations, intense rural-to-urban and international migration, and urbanization in tandem with rapid economic development are reshaping the context in which older persons live, including the size and composition of their households and their living arrangements.

The living arrangements of older people are an important determinant of their economic well-being as well as their physical and psychosocial health and life satisfaction. Research has also found an association between mortality risks at older ages and an individual's living arrangements. Older persons living alone or in institutions, for example, have higher overall mortality risks than those living with a spouse or other family members. The living arrangements of older persons can also have important macroeconomic implications by shaping the demand for housing, social services, energy, water and other resources.

In this context, the living arrangements and mechanisms of family support for older persons have become increasingly important for policymakers, especially in countries at advanced stages of population ageing. Understanding the interconnections between the living arrangements of older persons and their health and well-being has particular relevance in light of the pledge made by Governments in the 2030 Agenda for Sustainable Development that no one will be left behind. In practice, this pledge implies that the Sustainable Development Goals (SDGs) must be achieved for all segments of society and at all ages, with a particular focus on the most vulnerable, including older persons. Therefore, how and with whom older people live has important implications for the Goals related to poverty eradication (SDG 1), promotion of healthy lives and well-being at all ages (SDG 3), and promotion of gender equality (SDG 5).

To support Governments in their efforts to get better insights into the living arrangements of older persons, the Population Division has expanded its work on living arrangements of older persons that has so far focused on household living arrangements of older persons (database and metadata available at: <https://www.un.org/development/desa/pd/data/living-arrangements-older-persons>) and has now released a dataset that covers older persons in collective living quarters.

These two databases are the only databases providing harmonized and comparable data on patterns and trends of household and collective living arrangements of older persons at the global level, across regions and countries, and over time. These two databases are publicly available at: <https://www.un.org/development/desa/pd/data/living-arrangements-older-persons>.

This technical paper outlines the methodology employed in compiling the database and summarizes key findings regarding patterns and trends in older persons residing in collective living quarters. Section 2 details the data, definitions, and measures used to estimate the living arrangements of older persons in collective living quarters (CLQ). Section 3 analyzes general patterns revealed by these estimates across countries and regions. Section 4 proposes suggestions for refining data collection methods, aiming to contribute to the progress of the United Nations' initiatives in this specific area.

II. DATA, DEFINITIONS AND METHODS

The **Database on Older Persons in Collective Living Quarters 2022** is a unique dataset that provides harmonized and comparable data on patterns and trends of older persons aged 65 or over residing in collective living quarters (also known as “group quarters”). Data on such non-household living arrangements are limited and not all countries are providing information on the type of collective living quarters. The main source for non-household living arrangement data are population and housing censuses. The estimates for this database are based on 347 unique data sources from 135 countries or areas, representing approximately 77 per cent of global population aged 65 or over around 2010, with reference dates ranging from 1960 to 2018.

A. Definitions

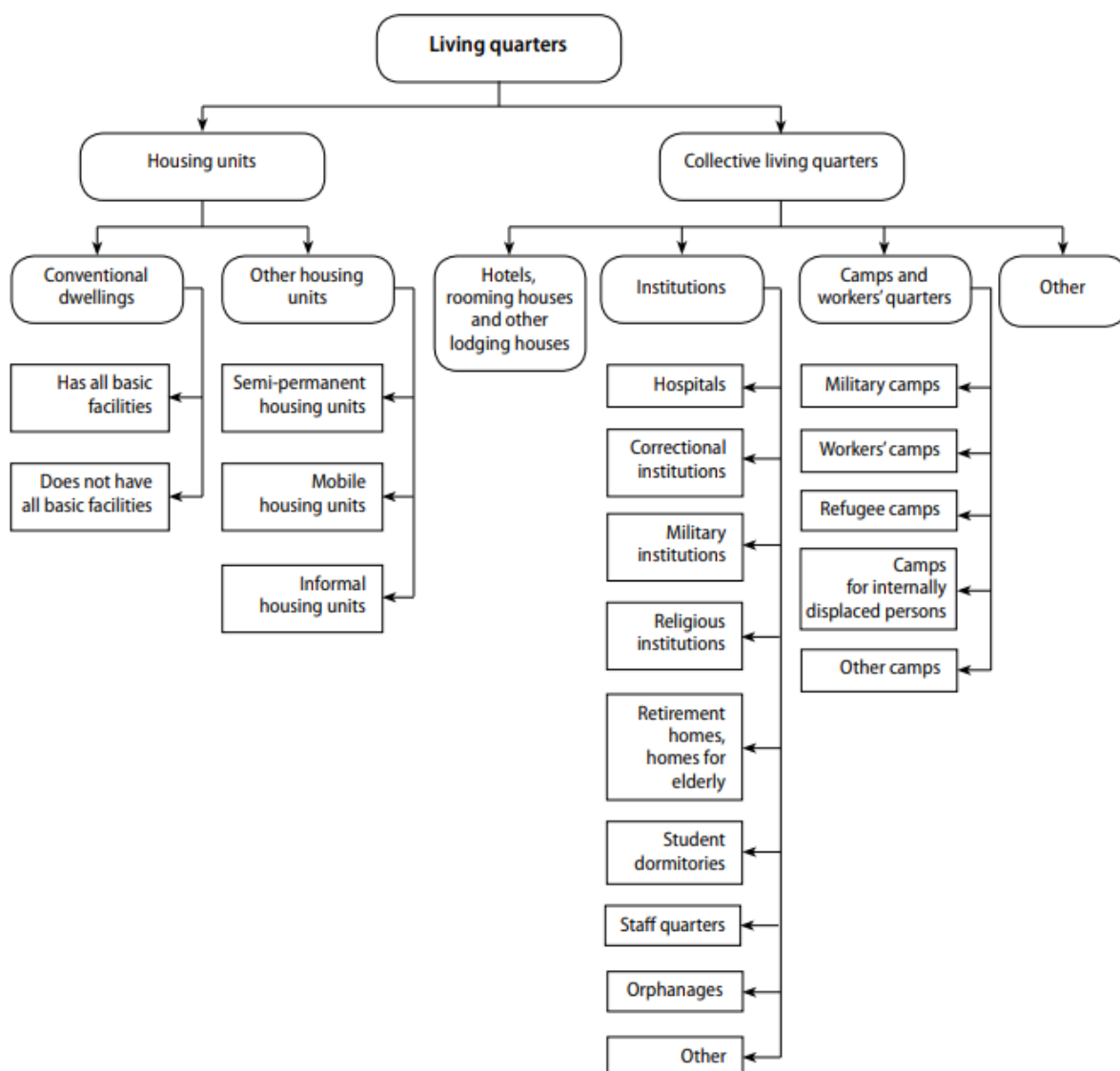
The United Nations Principles and Recommendations for Population and Housing Censuses Revision 2 (2008) serve as the primary international guidance for defining collective living quarters, including institutions, for statistical purposes. These Recommendations are designed to guide countries in conducting a population and housing census.

For census purposes, the term "person" refers to each individual within the census scope. As emphasized in the Principles and Recommendations (2008), individuals are categorized either as part of the household population (those living in households) or the institutional population (those residing in institutions), representing a subset of collective living quarters. Living quarters are classified as either housing units or collective living quarters (figure 1).

In accordance with the Principles and Recommendations (2008), collective living quarters are defined as structurally separate and independent places of abode intended for habitation by large groups of individuals or several households and occupied at the time of the census. These quarters typically feature shared facilities such as cooking and toilet installations, baths, lounge rooms, or dormitories. Collective living quarters also differ from typical household living arrangements because the people living in them are usually not related to one another. Examples of CLQs include individuals living in boarding houses (hotels, rooming houses and other lodging houses) or institutional living arrangements such as nursing homes, mental hospitals or wards, military installations (barracks), worker camps, correctional and penal institutions, and educational and religious group dwellings (e.g. boarding schools, orphanages, convents, monasteries, etc.). Institutional living arrangements are a subset of the CLQ or group quarters.



Figure 1. Classification of living quarters according to the Principles and Recommendations, Rev.2



B. Data sources

This database comes from two types of sources of data pertaining to the collective living quarters of older persons:

1. IPUMS-International Minnesota Population Center. Integrated Public Use Microdata Series, International: Version 7.3 [dataset]. Minneapolis, MN: IPUMS, 2020. <https://doi.org/10.18128/D020.V7.3>.

IPUMS-I samples are drawn from the microdata files of country-specific censuses with respect to the codes used to describe collective living quarters or group quarters. Collective living quarters were estimated based on the variable “GQ” which included collective dwellings, institutions and other group living arrangements such as boarding houses and educational and religious group dwellings (e.g. boarding schools, orphanages, convents, monasteries, etc.). Where possible, the subset of institutional living arrangements is presented separately. Indicators are estimated from the household rosters of 196 IPUMS-I samples, representing 70 countries or areas and with reference years ranging from 1960 to 2016.

2. Demographic Yearbook (DYB) of the United Nations (https://unstats.un.org/unsd/demographic-social/products/dyb/dyb_household/)

The Demographic Yearbook (DYB) compiles data on collective living quarters reported to the United Nations by national statistical offices. Collective living quarters estimated based on data from the DYB were drawn from Table B70 “Population by type of living quarters, age and sex”. This table does not provide information by type of living quarters. Estimates based on DYB records for 95 countries or areas are included in the database with reference years ranging from 1995 to 2018.

Box: Challenges of Using Administrative Data to Measure Older Persons in Collective Living Arrangements

International guidance for utilizing administrative sources for the measurement of older persons in collective living arrangements is limited. While the United Nations Economic Commission for Europe (UNECE) handbook "Using Administrative and Secondary Sources for Official Statistics" (UNECE, 2011), offers valuable insights into the potential benefits and frameworks for using administrative data, it underscores several notable challenges.

- 1. Conversion from administrative units to statistical units:** One major challenge highlighted by the handbook (UNECE, 2011) is that the units used in administrative sources do not correspond directly to the definition of the required statistical units. The process of converting administrative units to statistical units can be quite difficult conceptually and often involves some form of modelling.
- 2. Challenges in Measurement:** Using administrative data to measure the number and percentage of older persons residing in collective living arrangements, including institutions, presents several obstacles:
 - a. **Standardization of variables:** The standardization process involves adapting variable definitions from each administrative record to align with the standardized definitions in the population-based statistical register. This entails changes in variable names and the encoding of categories.
 - b. **Undercount or double count:** In many countries, data related to institutional rely on discharge notifications from municipal and private-sector facilities such as residential homes for older people or sheltered housing units that provide assistance for older people. Unfortunately, there is often no cross-reference with the population register, leading to potential undercounts and double counts.
 - c. **Duration of stay:** Defining the duration that qualifies an individual as living in an institution can be challenging. Older persons, particularly those with health issues, may move between various living arrangements (home, hospitals, day care centers, nursing homes, etc.). Consequently, a criterion needs to be chosen to define how long a person must have been living in a collective household to be considered living in an institution.

C. Disaggregation

Data on collective living quarters are generally limited and lack disaggregation by specific types of living quarters. Where feasible, and contingent upon available data, efforts have been made to disaggregate the information by sex and broad age groups (65 years or over, 65 to 79 years, and 80 years or over).

D. R script for computing older persons in collective living quarters

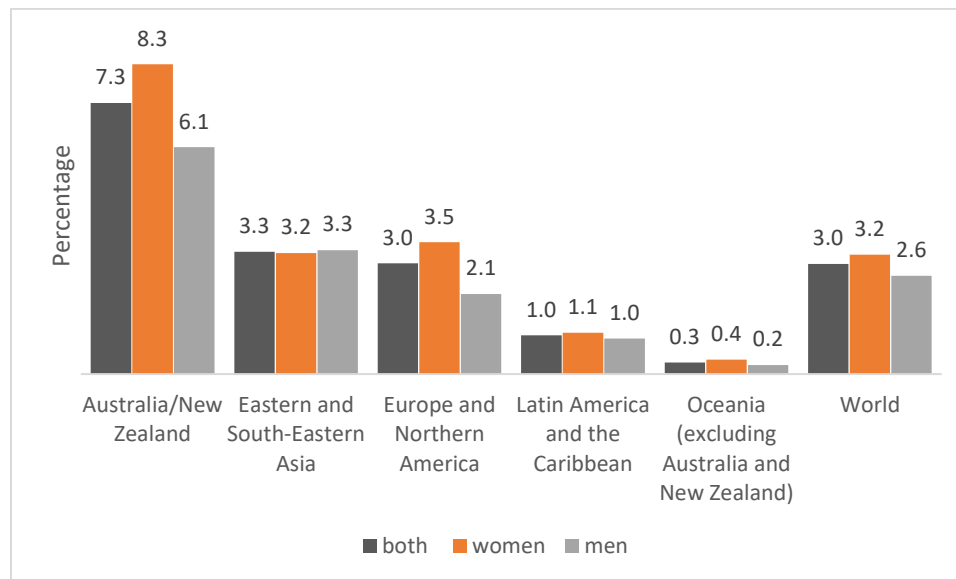
The processing of the database involved the utilization of scripts developed in R version 4.3.2. R is a standard software application used by the Population Division for various demographic computational tasks involving demographic estimates and projections, and data visualization. R is an open-source, freely available software accessible through the Comprehensive R Archive Network (CRAN) at <https://cran.r-project.org/bin/windows/base/>. The R-script will be available upon request.

III. SUMMARY OF KEY FINDINGS

The majority of older persons continue to live in private households either alone, with their spouse or with their children or with other family members (United Nations, 2020). In many high-income and increasingly in middle-income countries, however, living in an institution has become an option for older persons who have difficulty managing on their own or who need specialized medical services.

At the global level, 3 per cent of persons aged 65 years and over resided in collective living quarters with no significant difference between men and women (3.2 per cent for women versus 2.7 per cent for men) (figure 2). However, when considering persons aged 80 years and over (known as “the oldest-old population”), the percentage residing in collective living quarters increases to 5.5 per cent (figure 3).

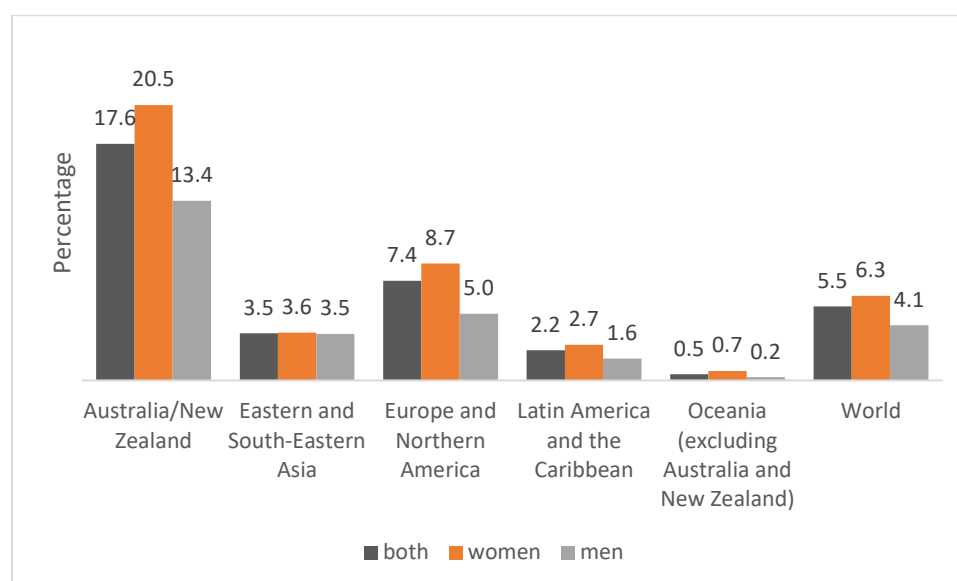
Figure 2. Percentage of persons aged 65 years or over residing in collective living quarters, circa 2010



Globally, among the oldest-old, the proportion of oldest men and women residing in CLQ varies widely among regions, but generally a higher proportion of older women than to older men (6.3 per cent of older

women compared to 4.1 per cent of older men) live in CLQ. For instance, in Australia and New Zealand, where the overall proportion of older persons living in CLQ is higher than in other regions, women are 1.5 times more likely to live in this type of living arrangement than men (20.5 per cent for women vs. 17.6 per cent for men). Similar gender-specific trends are observed in Europe, Northern America, Latin America, and the Caribbean, where older women are at least 1.6 times more likely than older men to live in such arrangements. Notably, in Oceania, a significant gender gap in the proportion of the oldest persons residing in CLQ is observable, with 0.7 per cent of older women compared to 0.2 per cent of older men. In contrast, in Eastern and South-Eastern Asia, the gender gap is relatively small, with 3.6 per cent of older women and 3.5 per cent of older men living in collective living arrangements.

Figure 3. Percentage of persons aged 80 years or over residing in collective living quarters (circa 2010)



Across the 135 countries or areas with available data, the share of oldest-old persons residing in collective living quarters differed markedly, ranging from 0.1 per cent in Indonesia to 22 per cent in Canada. A substantial number of countries mainly in Eastern Europe, Eastern and South -Eastern Asia (except for Japan), Latin America and the Caribbean, Oceania and sub-Saharan Africa have lower levels of oldest-old residing in collective living quarters. Twenty-two countries report more than 10 per cent of the oldest-old residing in such arrangements, including Japan, Western and Northern European countries, Australia, and New Zealand (figure 4).

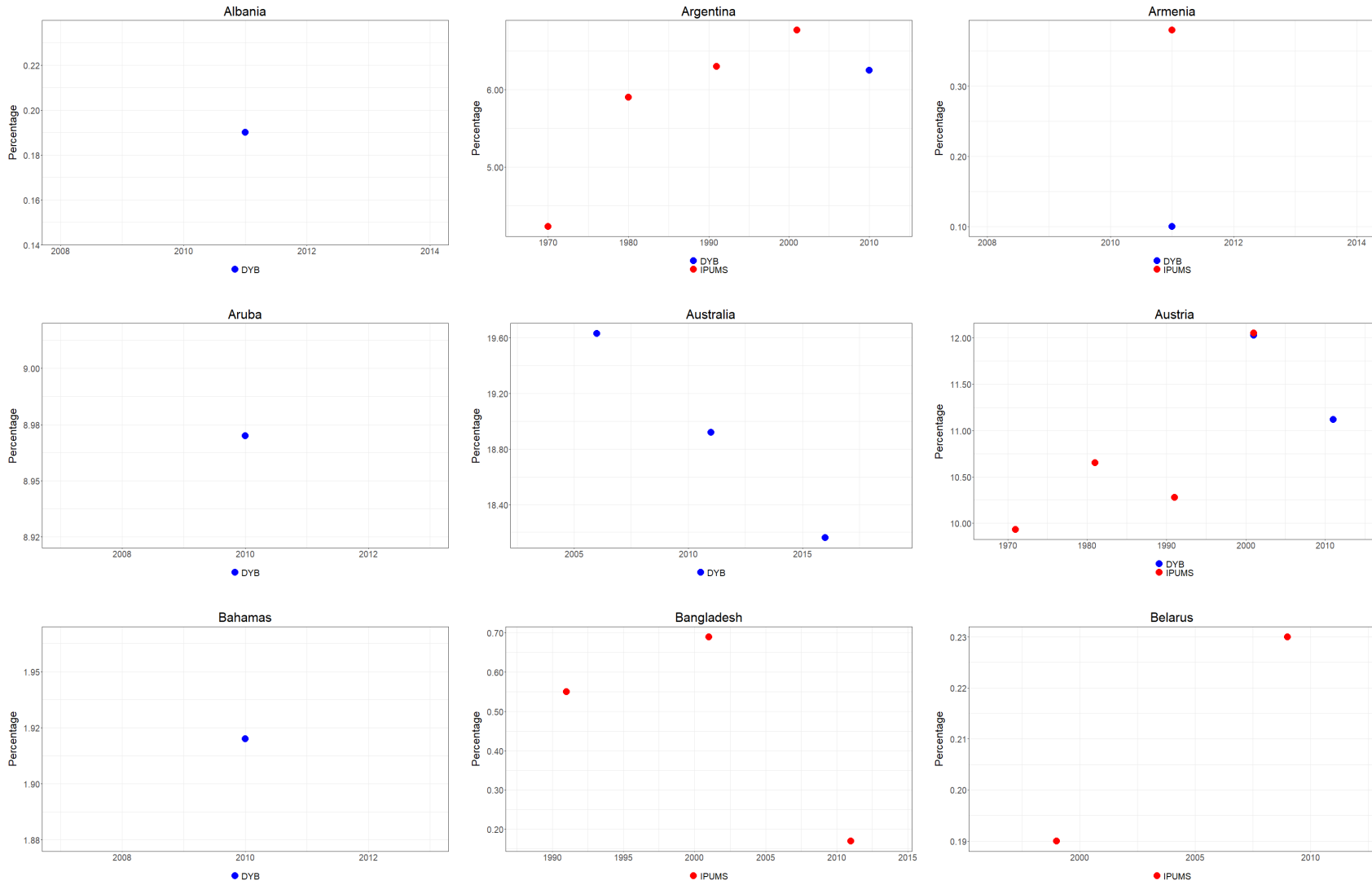
Further analysis of collective living quarters data indicates that the majority of older persons residing in collective living quarters lived in institutions. For instance, the 2010 census in Brazil reports that 1.7 per cent of the oldest-old population resides in CLQ, with 1.6 per cent living in institutions. The 2011 census in Portugal shows 11 per cent of the country's older persons lived in CLQ, with 10.6 per cent living in institutions, while the 2004 census in Sierra Leone indicates 0.38 per cent of older persons residing in CLQ, with 0.35 per cent living in institutions.

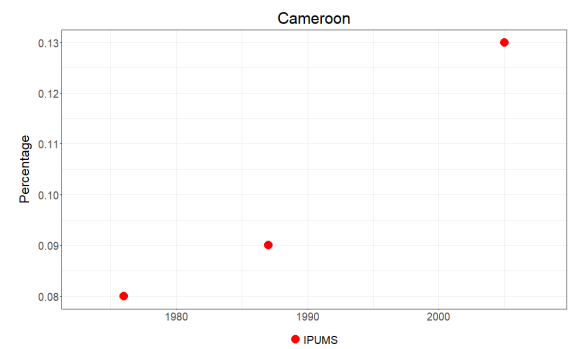
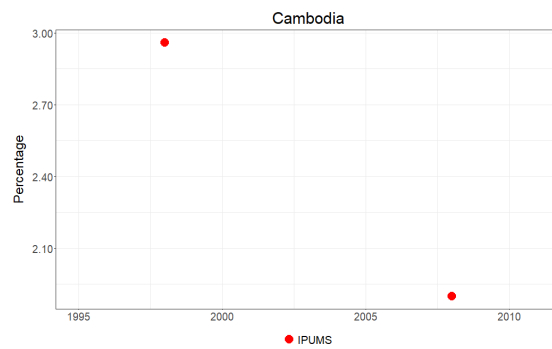
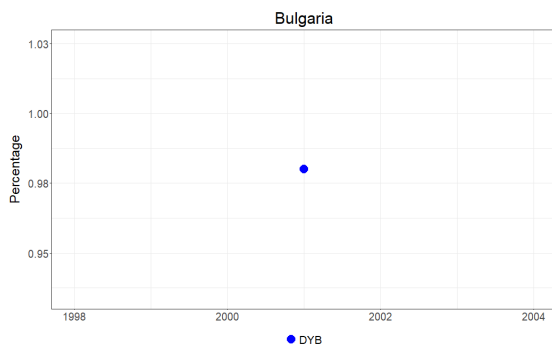
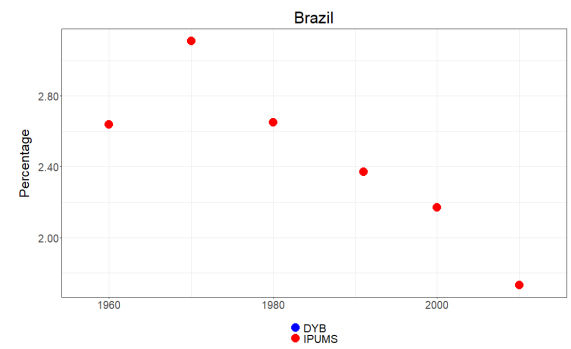
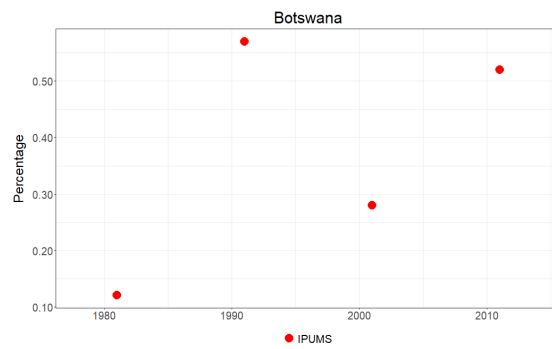
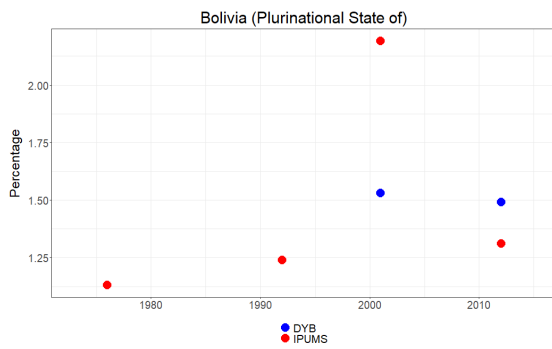
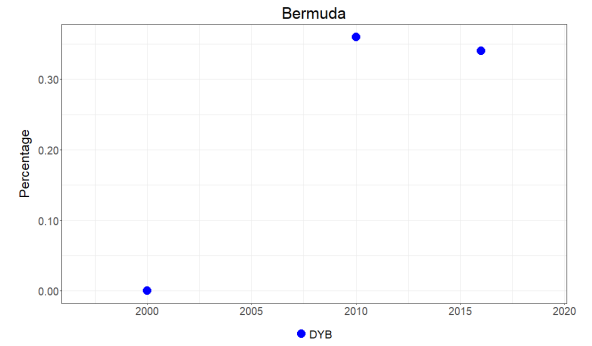
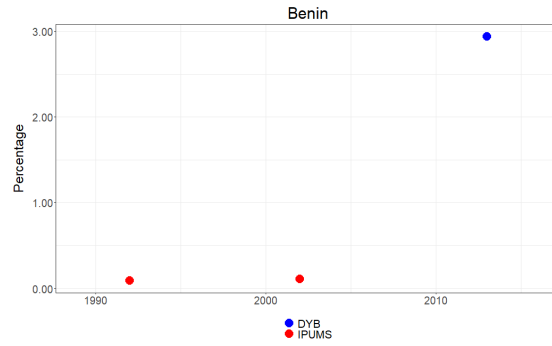
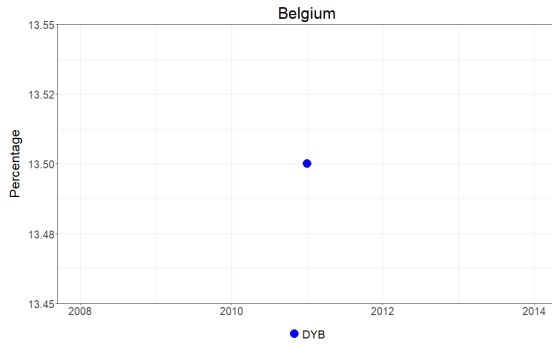
Figure 4 illustrates patterns and trends among the oldest-old persons residing in collective living quarters. The database is categorized into three age groups (65 plus, 65-75 years, and 80 years and over). Notably, the proportion of older persons in collective living quarters within the 65-75 age group is significantly lower than that of age group 80 years or above. As a result, the analysis will focus on the oldest-old persons.

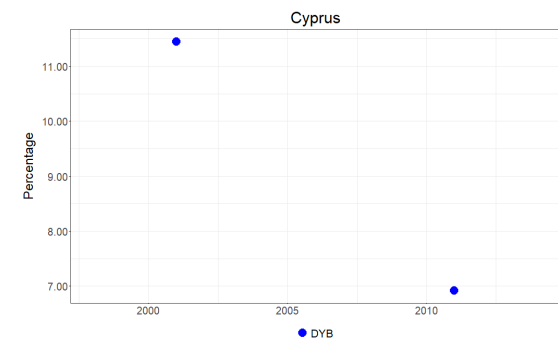
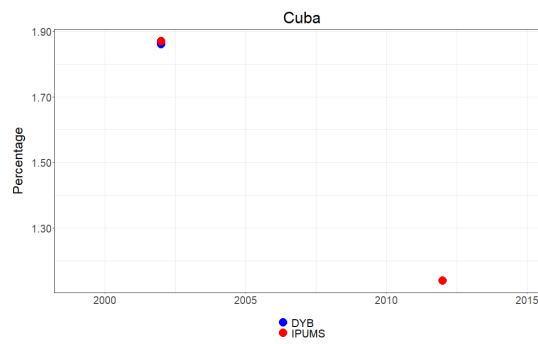
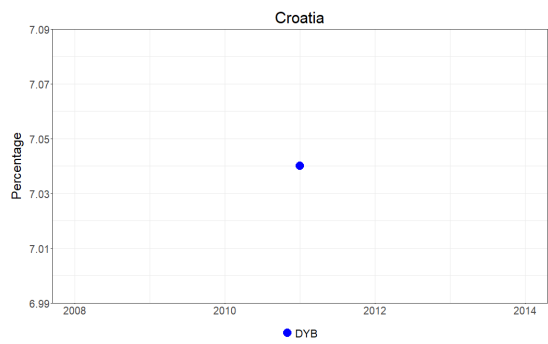
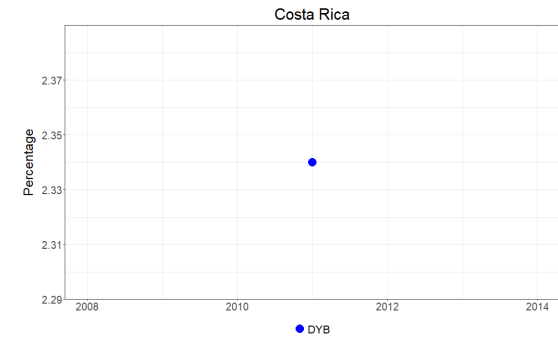
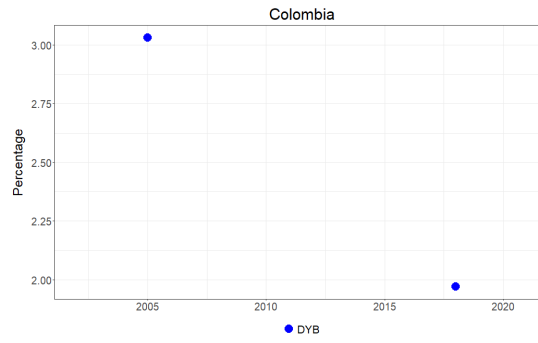
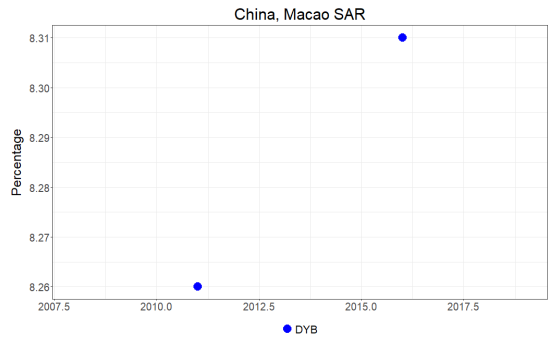
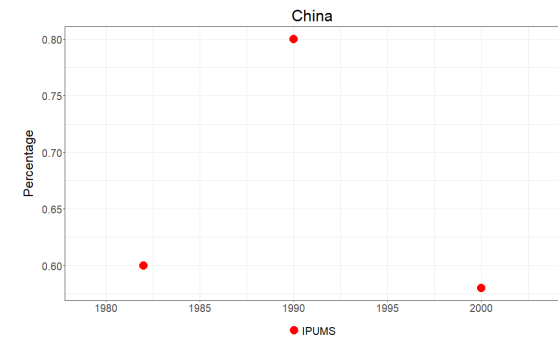
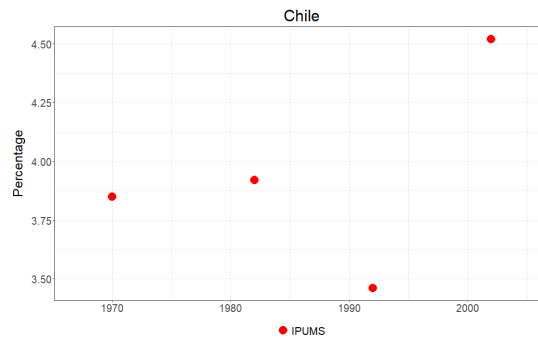
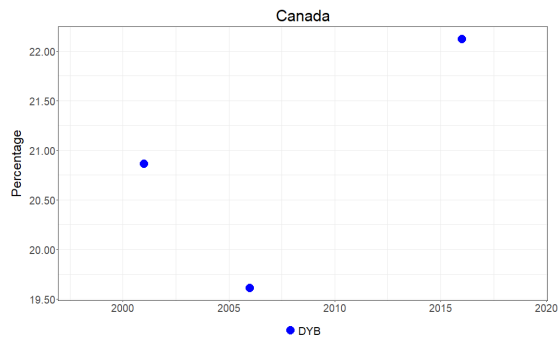
The figure shows substantial global variation in the prevalence of oldest-old persons in collective living arrangements. Argentina, Bolivia, Hungary, Portugal, and Rwanda demonstrate a significant increase in the proportion of oldest-old persons in such arrangements. In contrast, Brazil, Ecuador, Greece, Indonesia, Mexico, Norway, Poland, and the United States exhibit a downward trend, indicating a decrease in the percentage of older persons in collective living quarters. Conversely, certain countries, like France, exhibit a relatively stable situation regarding older persons in this type of living arrangement.

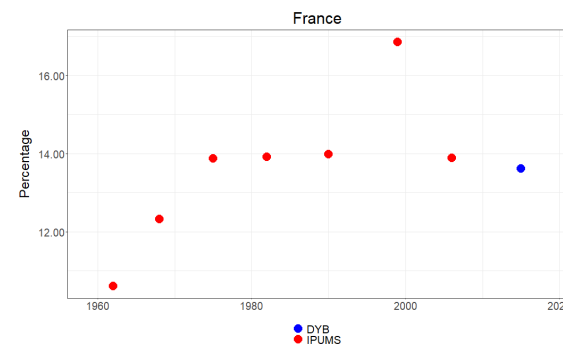
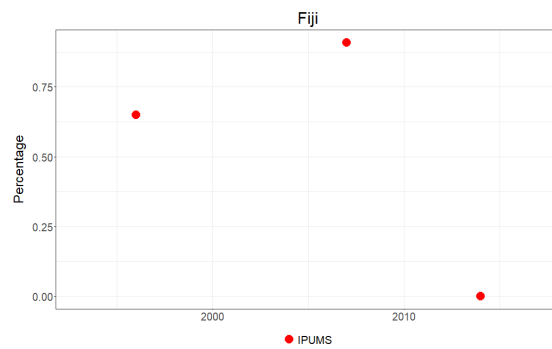
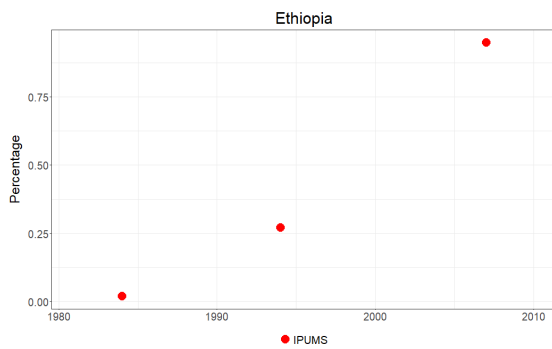
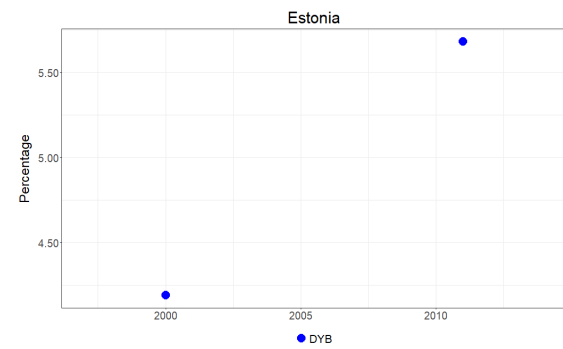
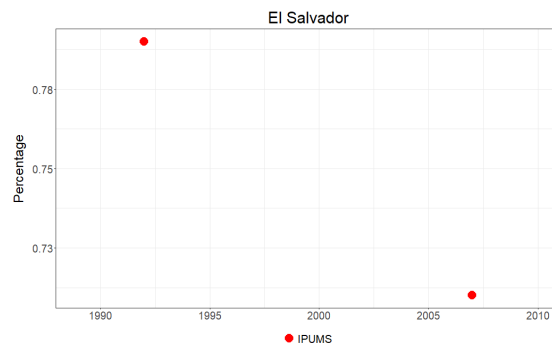
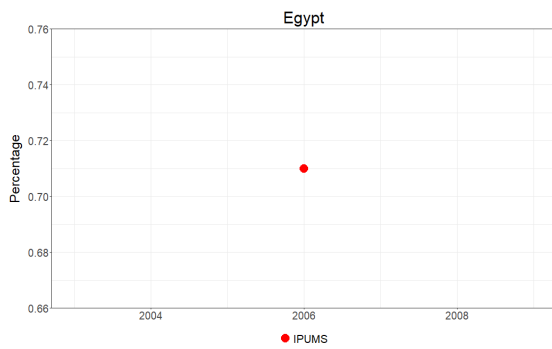
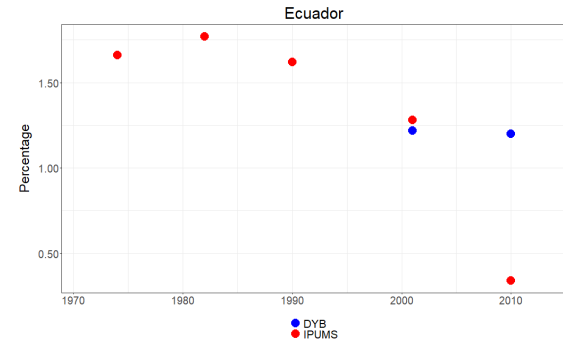
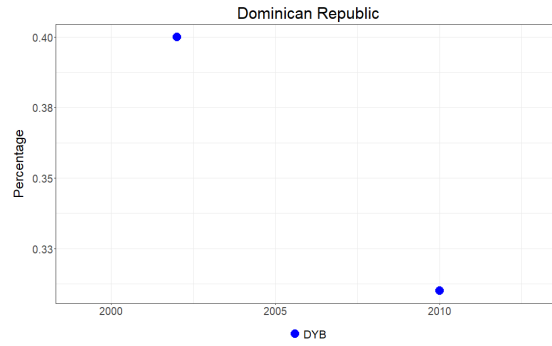
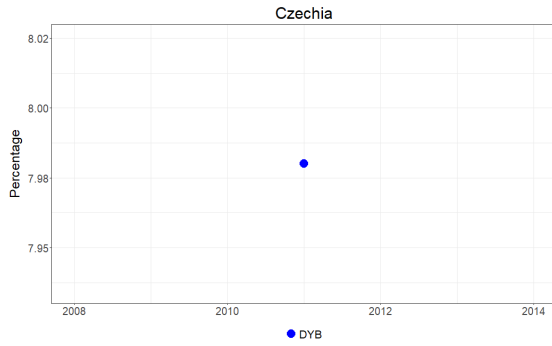
It's important to interpret these numerical examples with caution, considering the limitations of the empirical data available. To understand and interpret observed trends, it is critical to review country specific socio-economic and cultural contexts as well as national policies and programs that impact on living arrangements of older persons. One such example are policies in support of de-institutionalization of long-term care adopted in recent decades in some European countries, favoring community-based care models that could have contributed to the decline of older persons living in CLQ. For example, Denmark and Sweden had suspended institutional care altogether in 1987 and in 1992, respectively, and transitioning to a system where residential care is provided in special housing of various forms. This housing is characterized as “independent housing” or “assisted living”, where residents are tenants and receive services based on their needs rather than their location (UNECE, 2020). This shift towards community-based care is a part of a broader trend in many countries to move away from traditional institutional models toward more individualized and community-integrated care approaches. By providing services based on individual needs in independent or assisted living settings, the aim is to promote autonomy, dignity, and a higher quality of life for individuals requiring care and support.

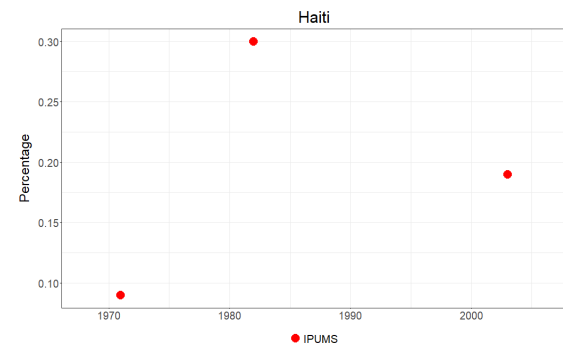
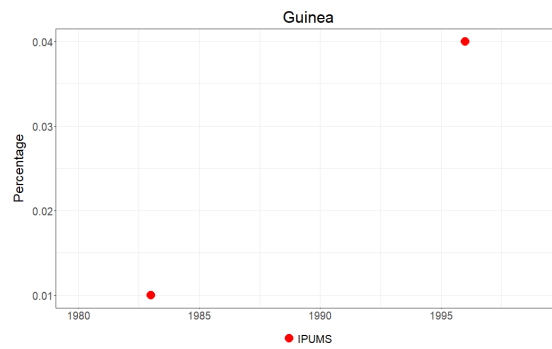
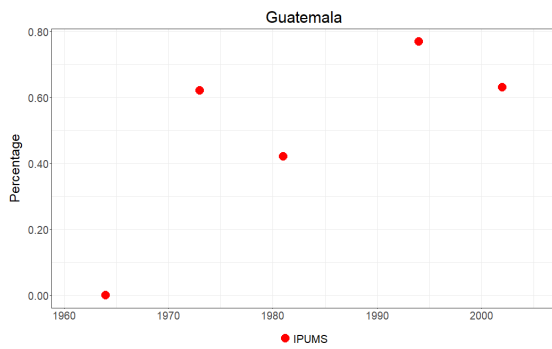
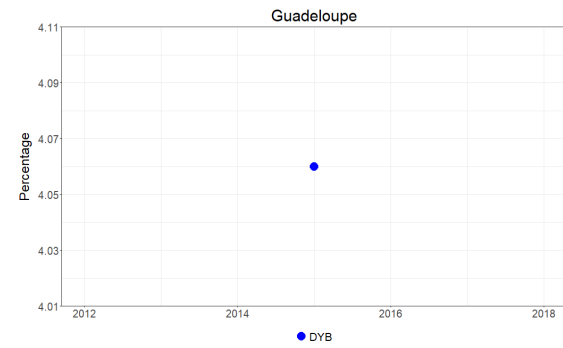
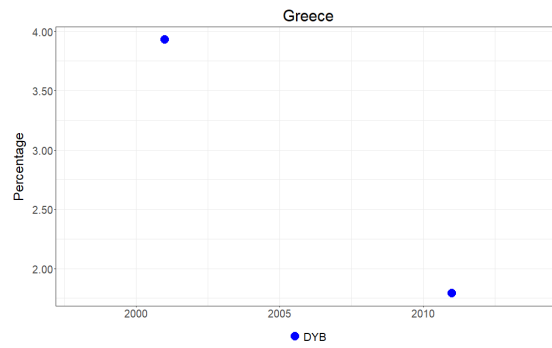
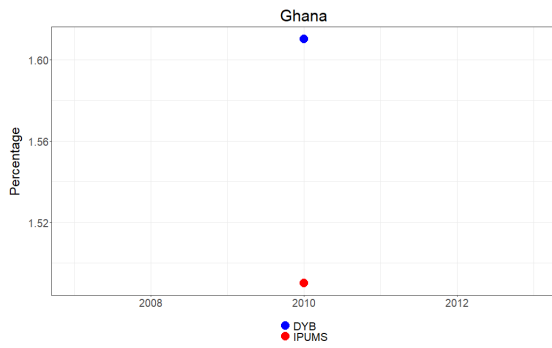
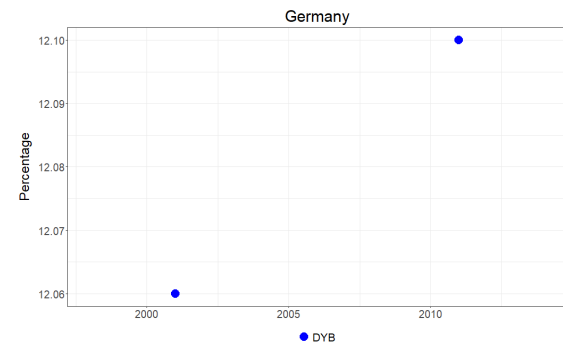
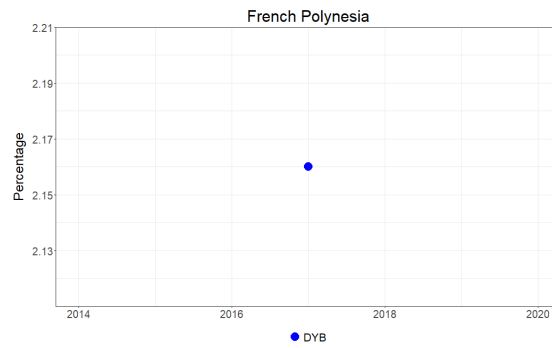
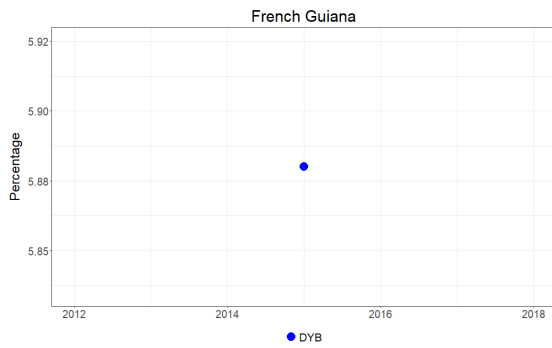
Figure 4. Trends in the proportion of older persons aged 80 or older living in CLQ by data source and year

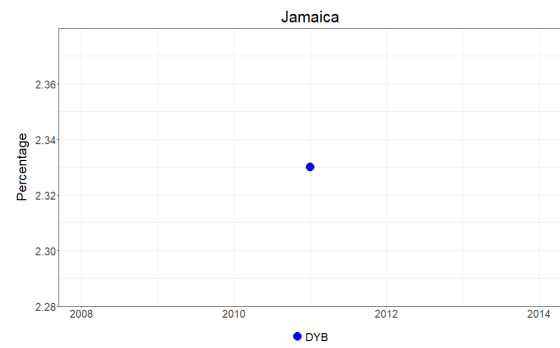
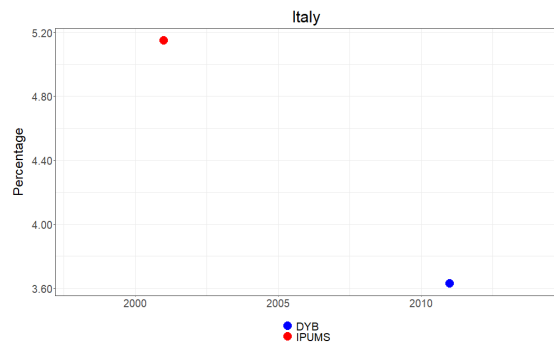
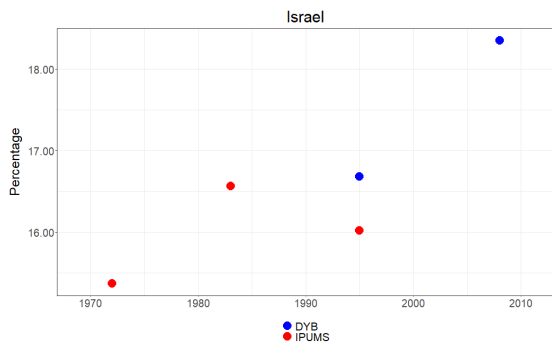
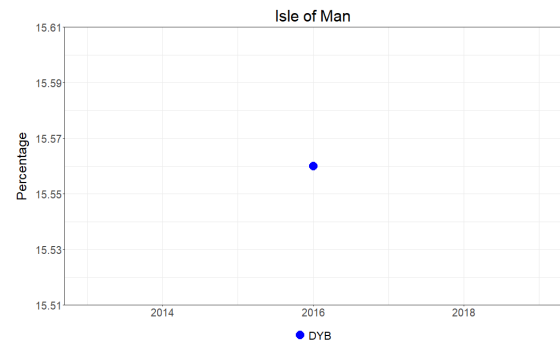
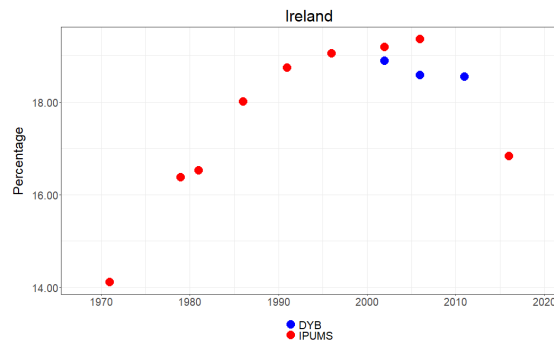
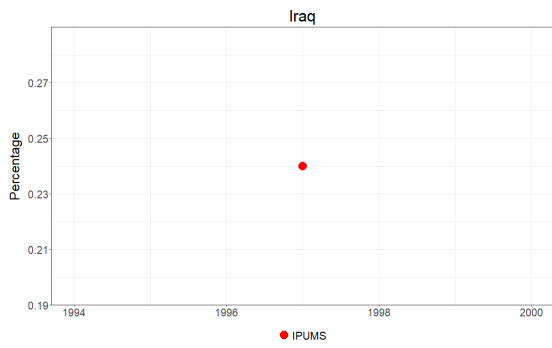
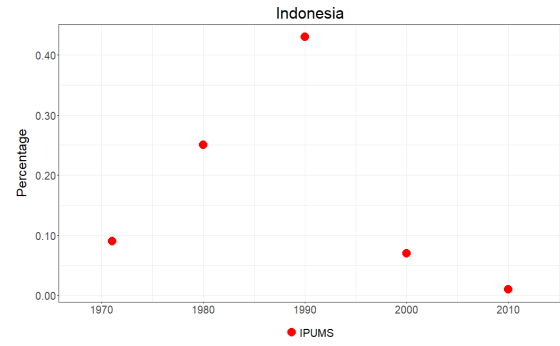
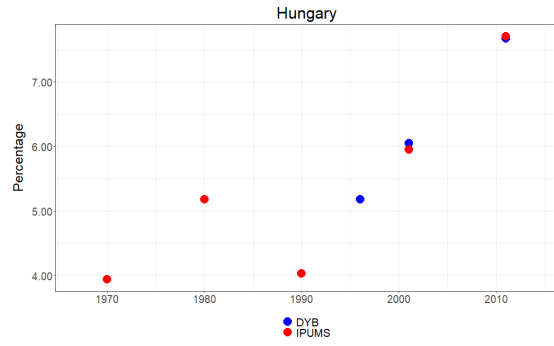
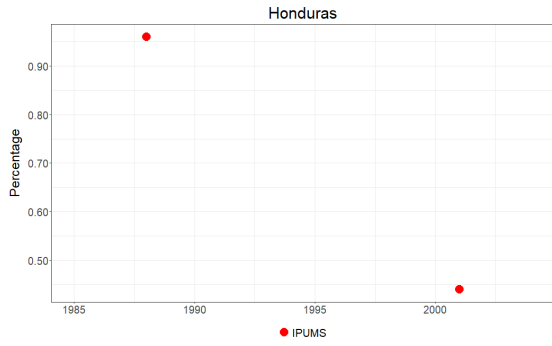


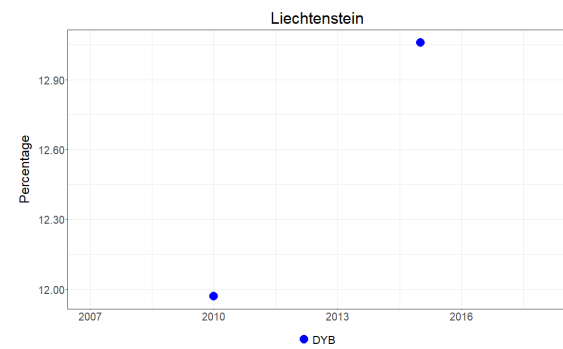
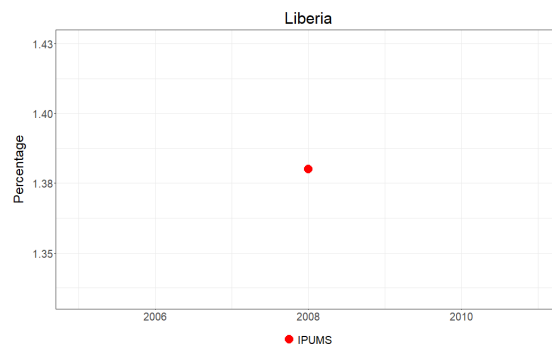
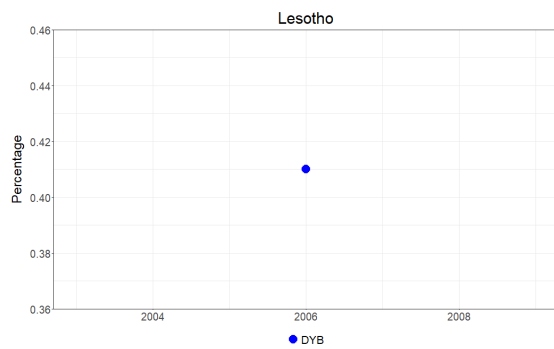
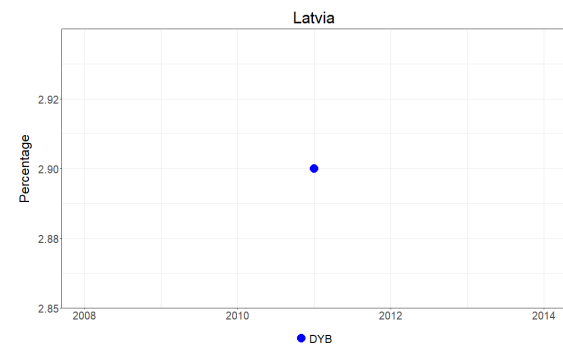
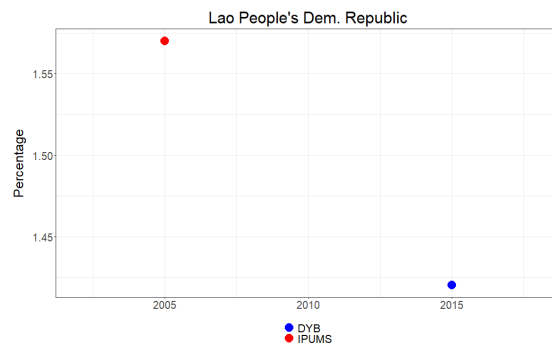
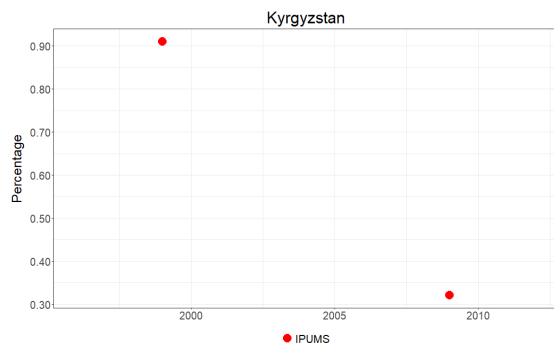
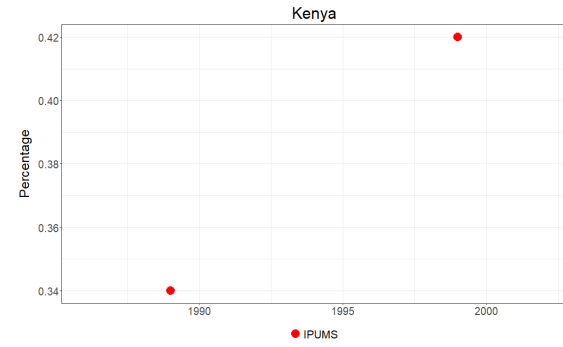
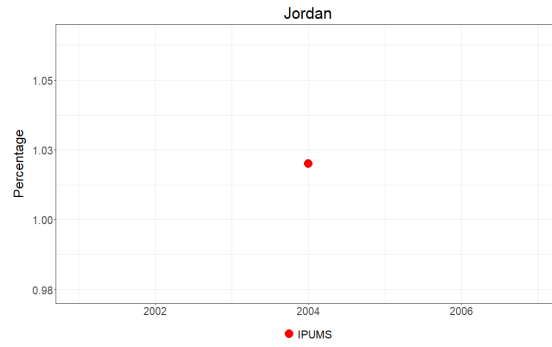
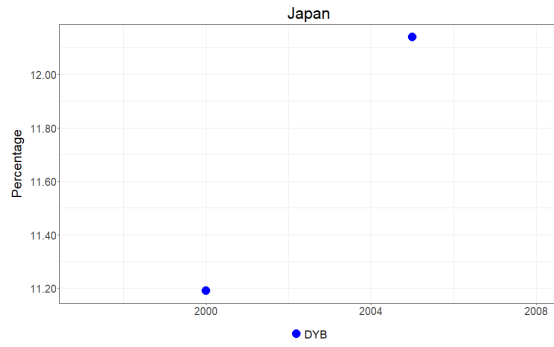


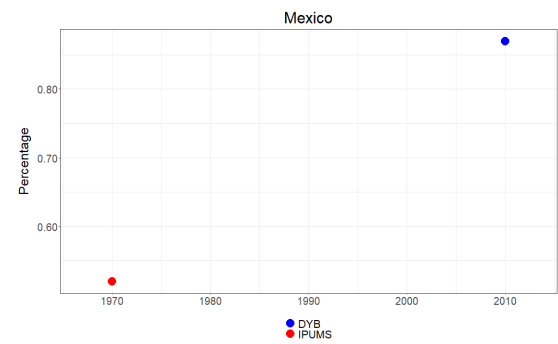
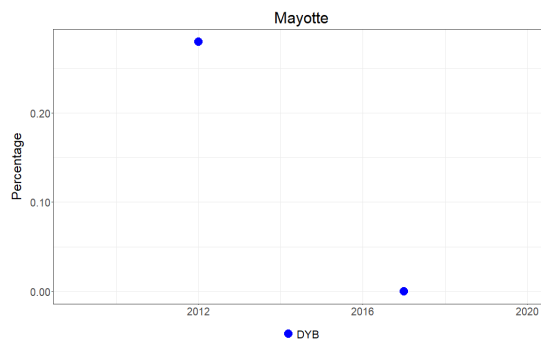
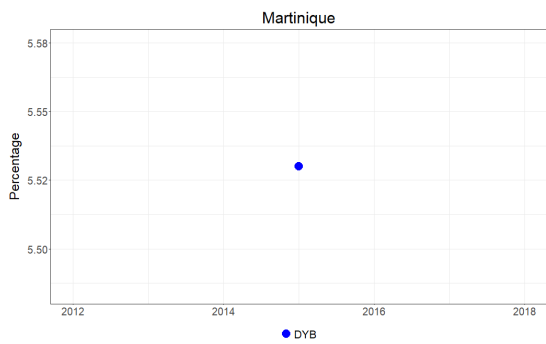
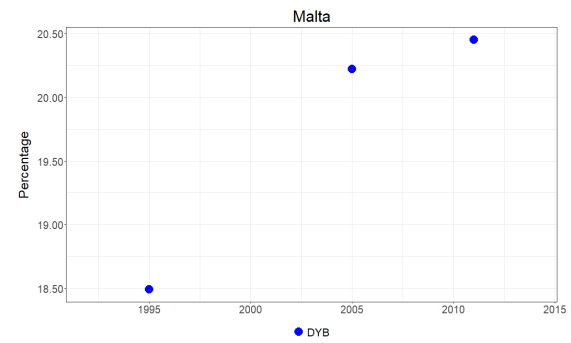
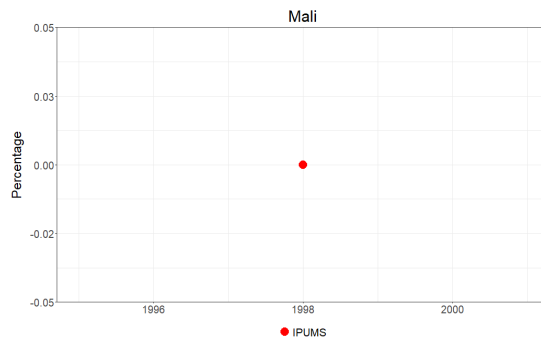
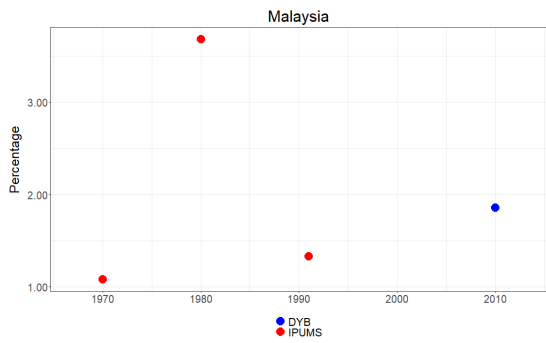
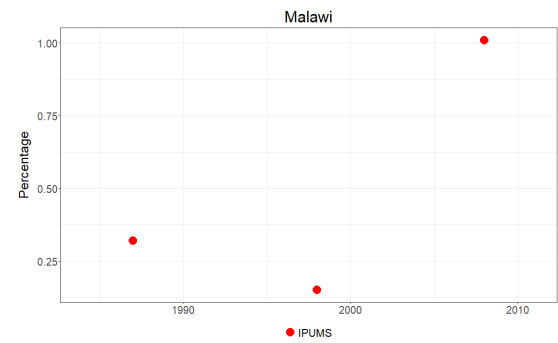
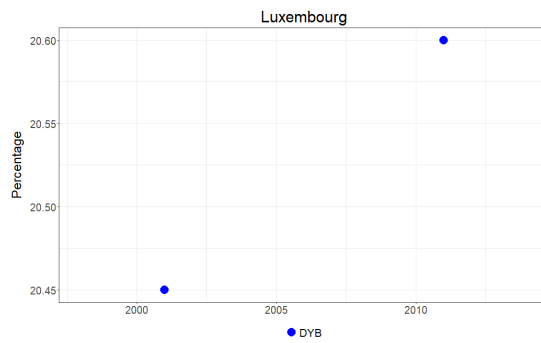
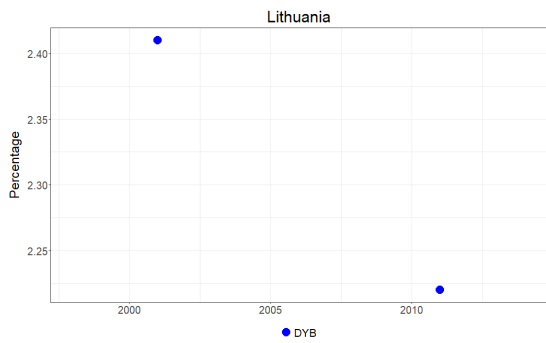


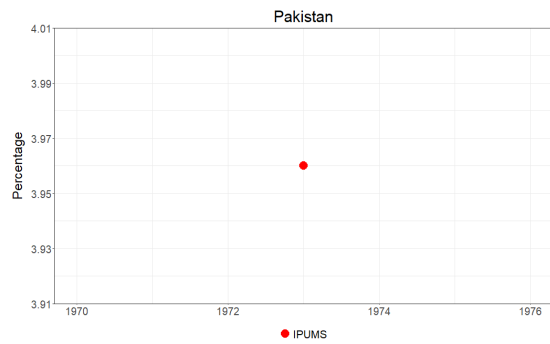
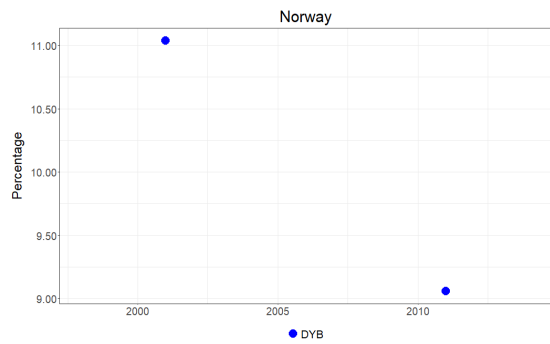
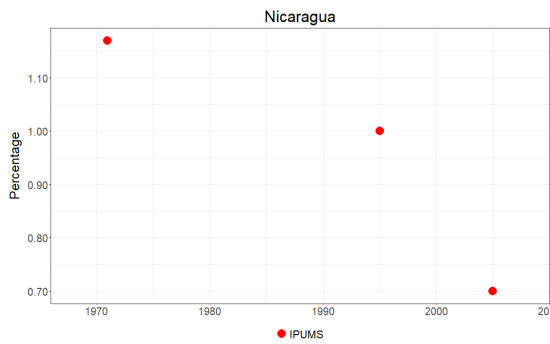
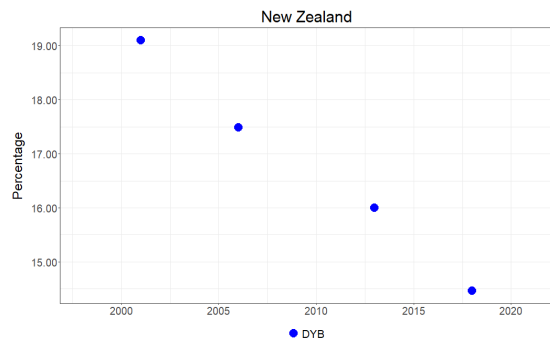
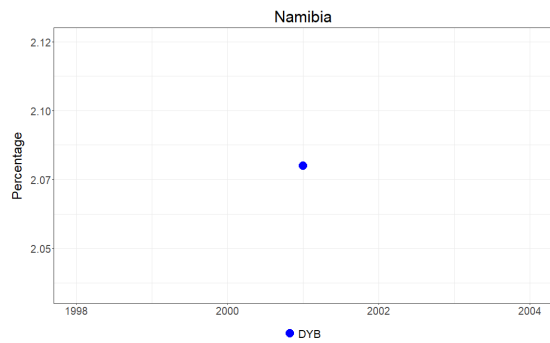
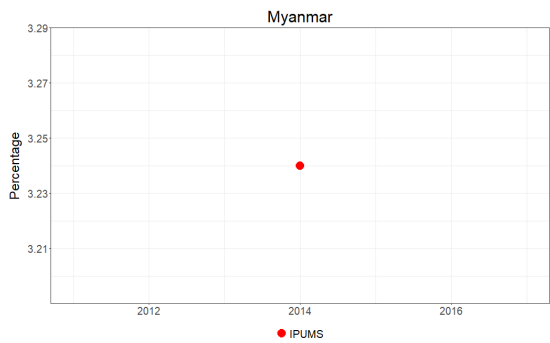
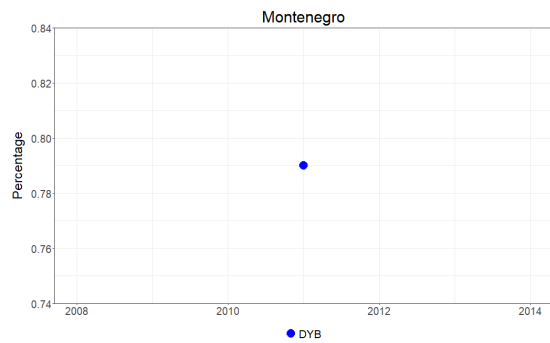
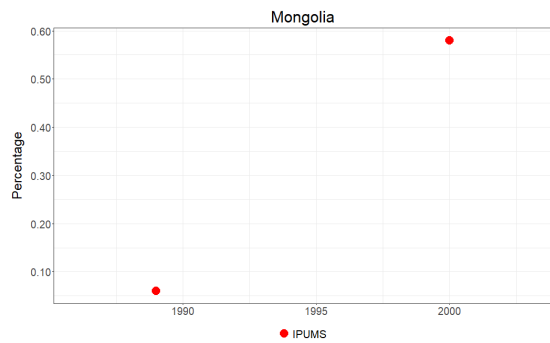
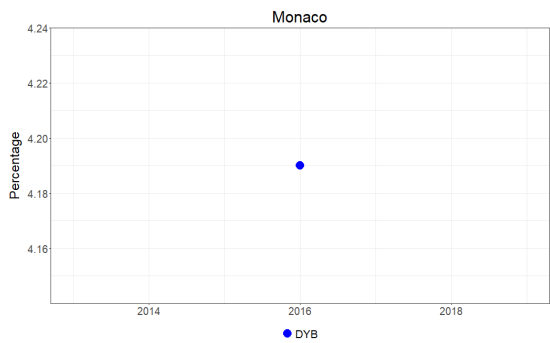


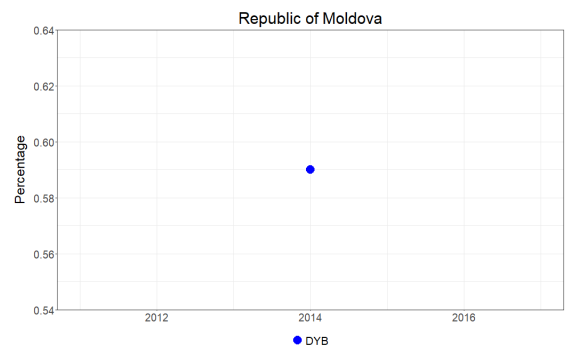
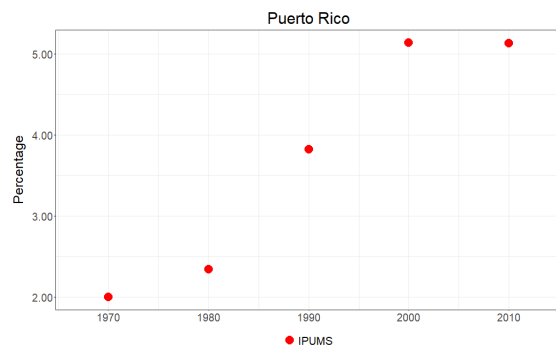
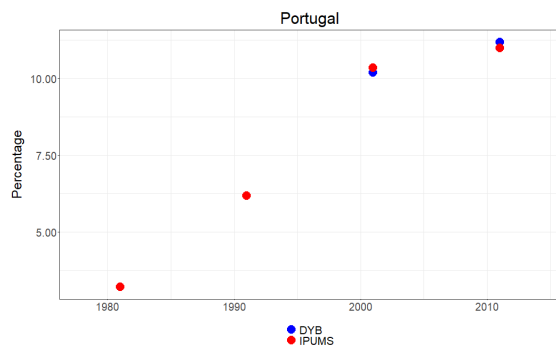
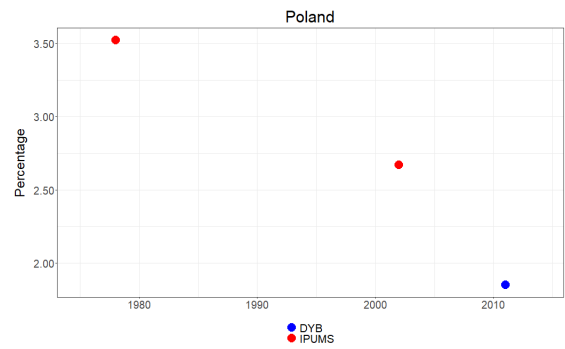
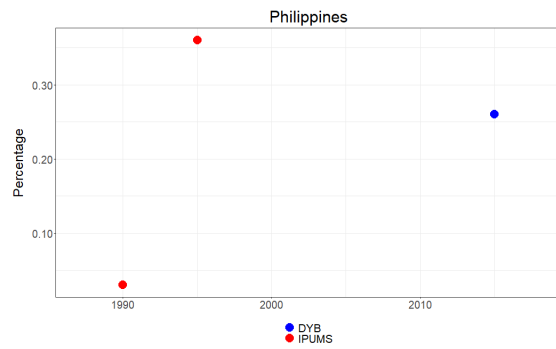
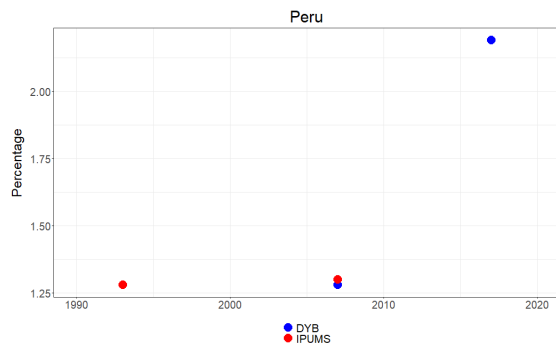
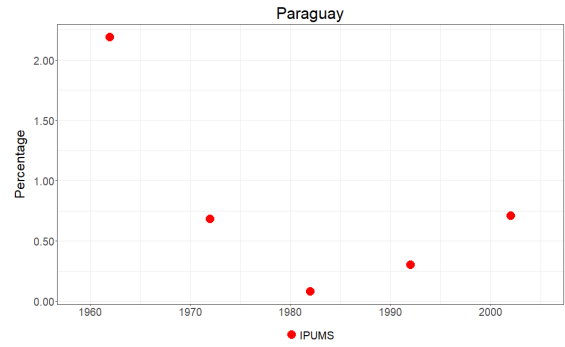
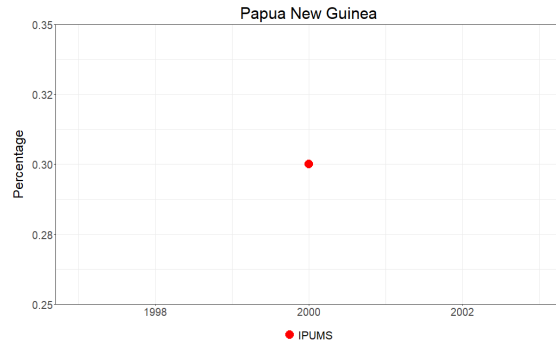
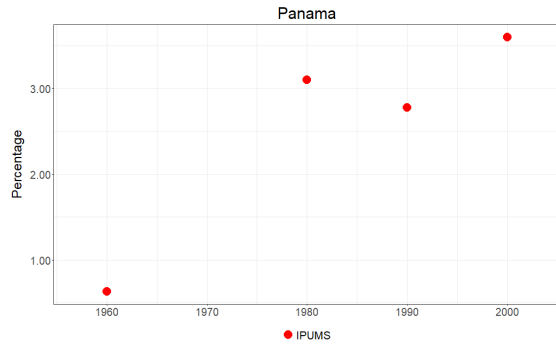


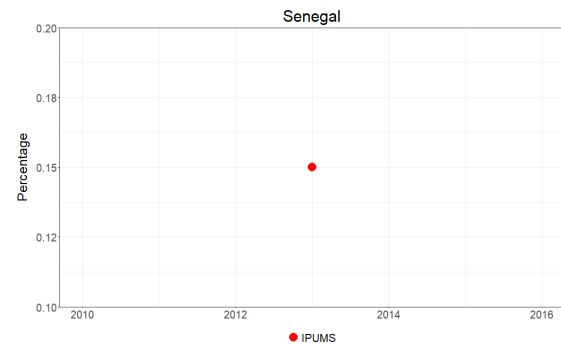
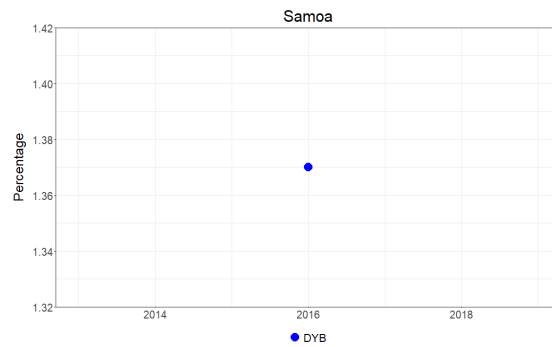
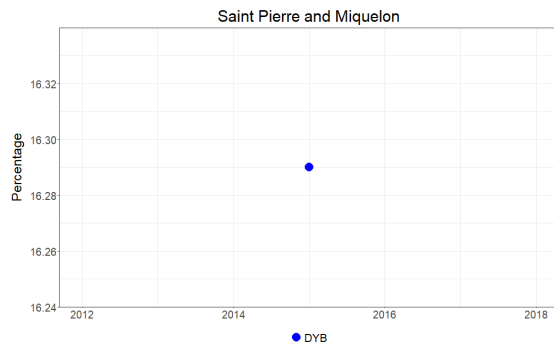
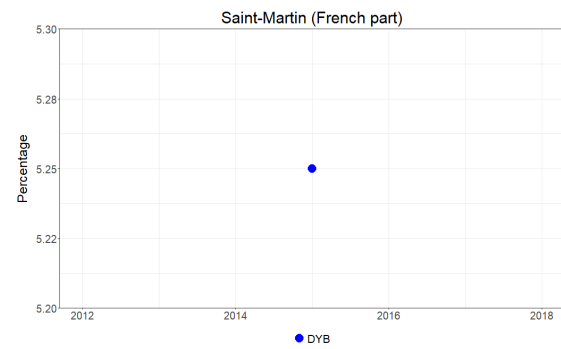
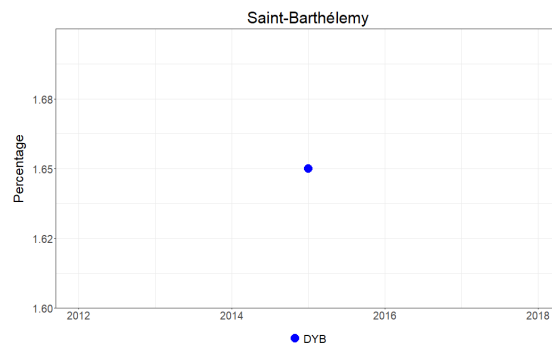
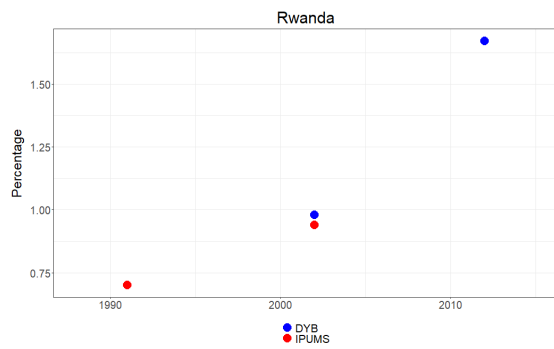
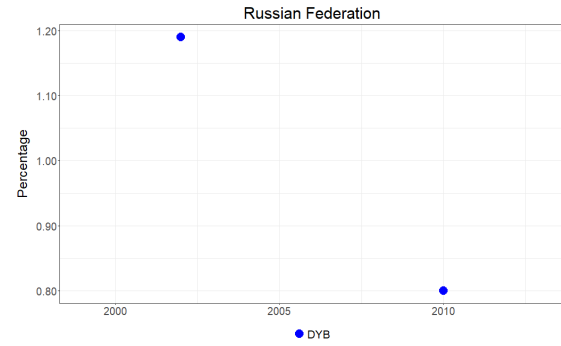
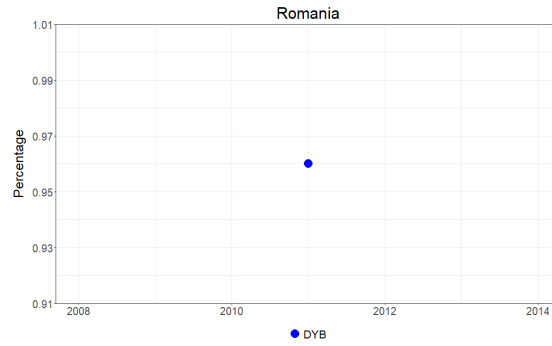
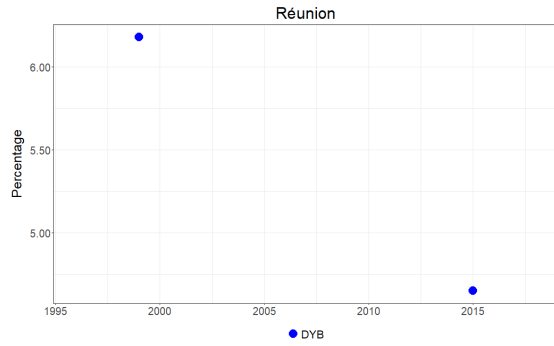


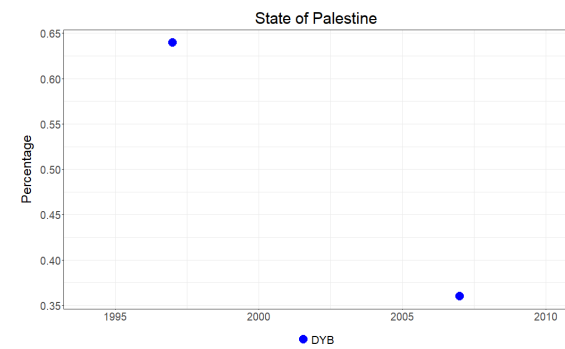
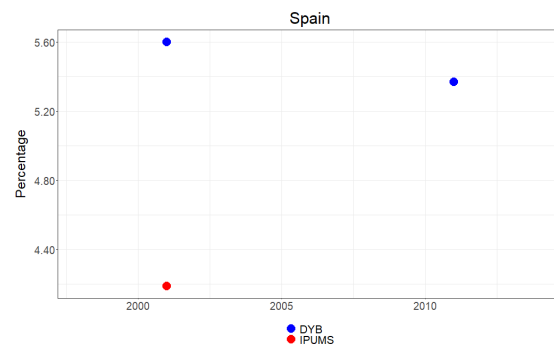
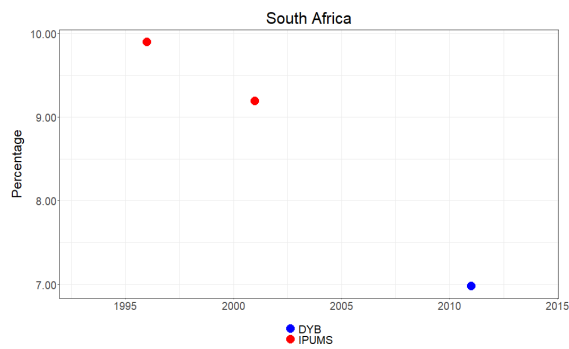
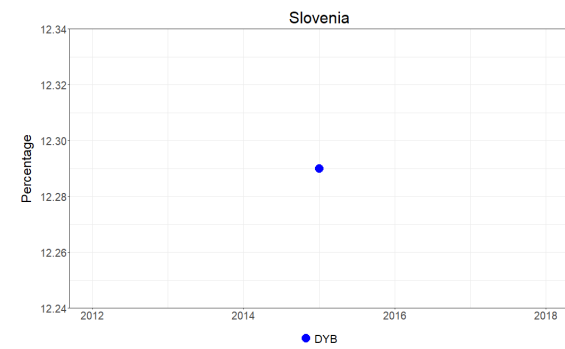
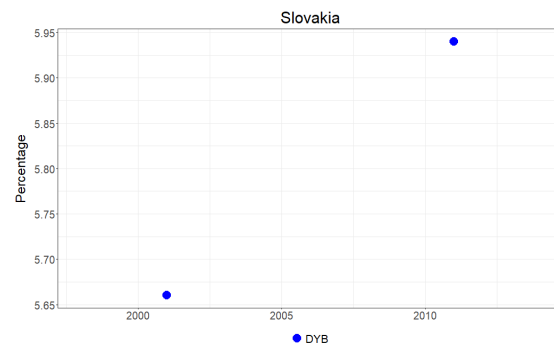
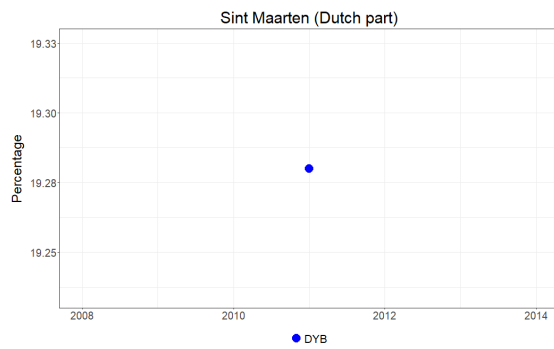
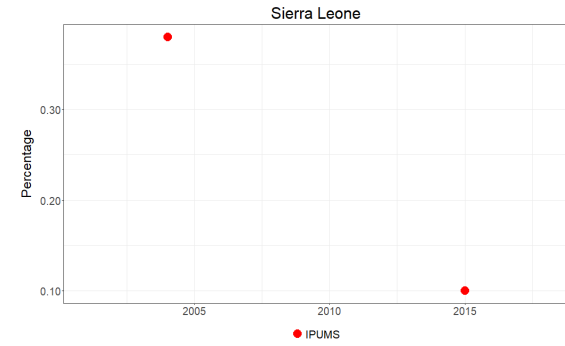
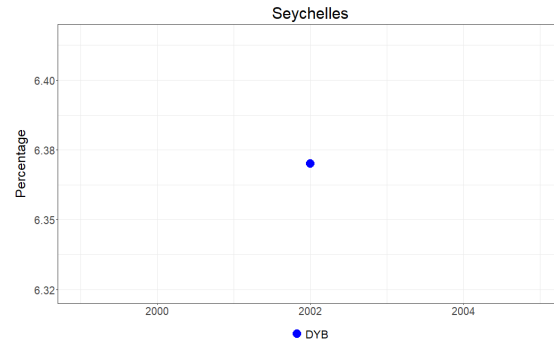
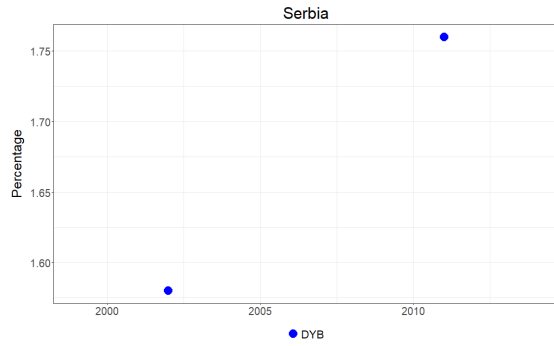


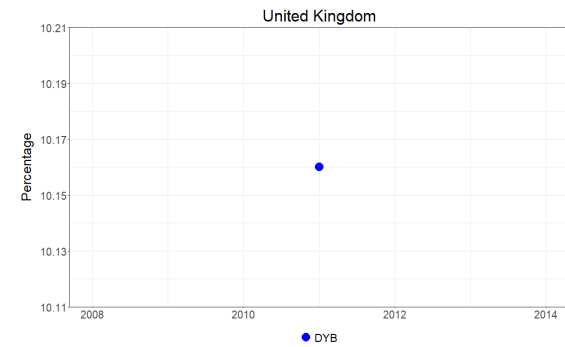
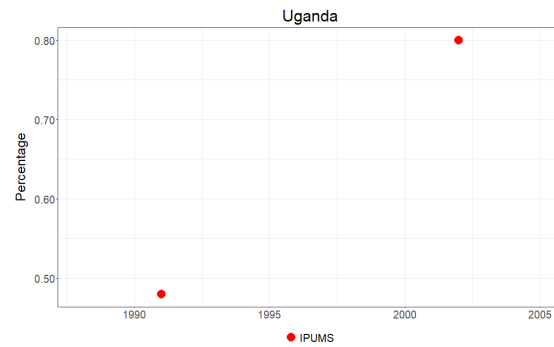
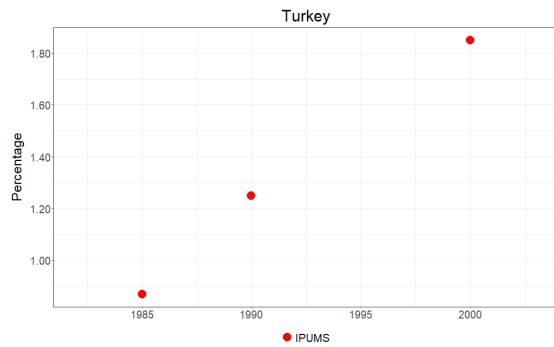
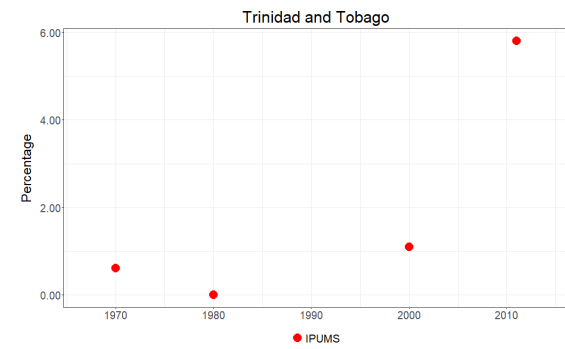
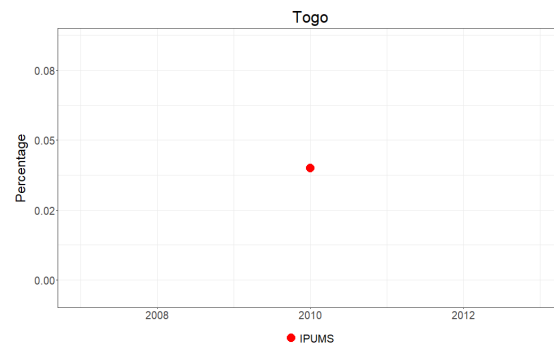
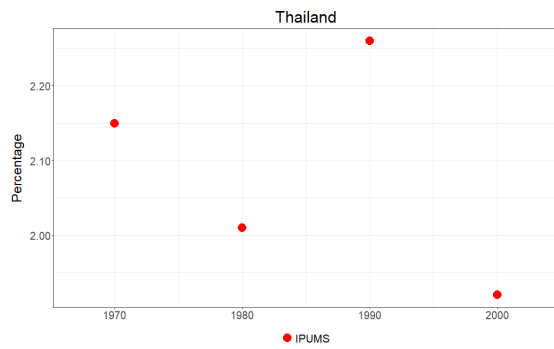
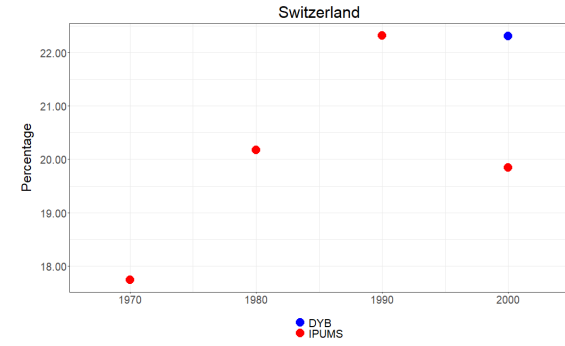
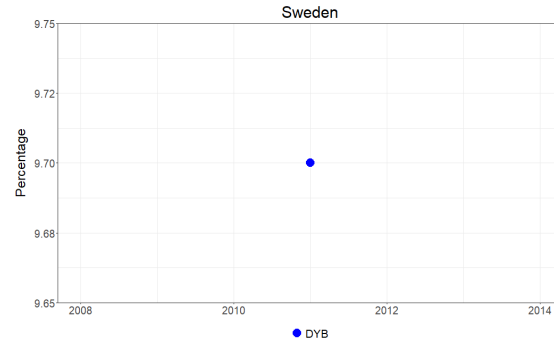
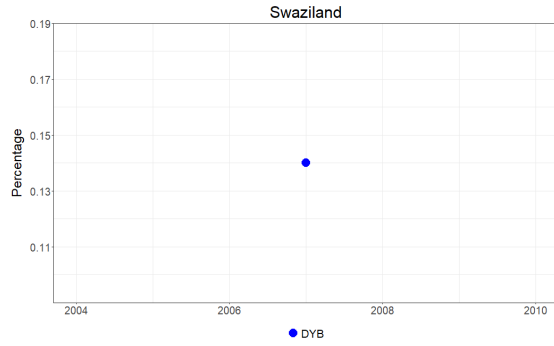


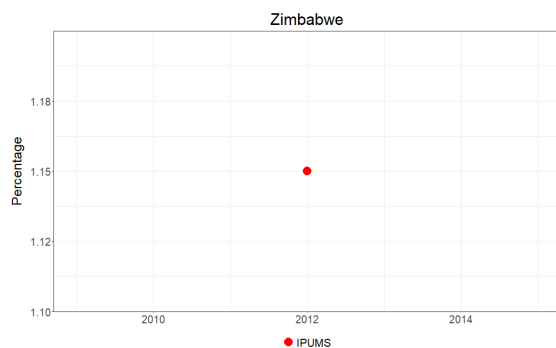
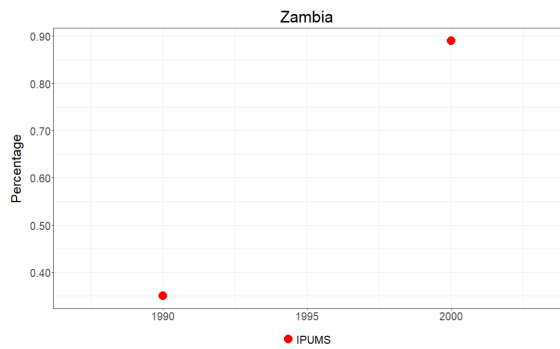
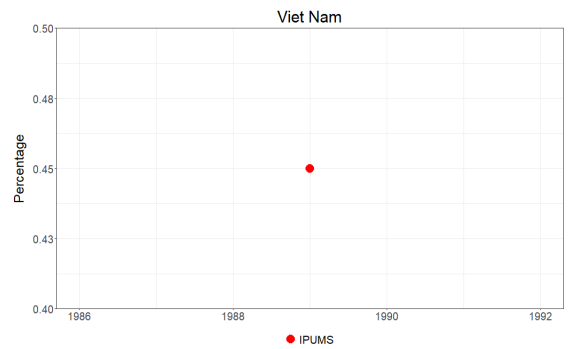
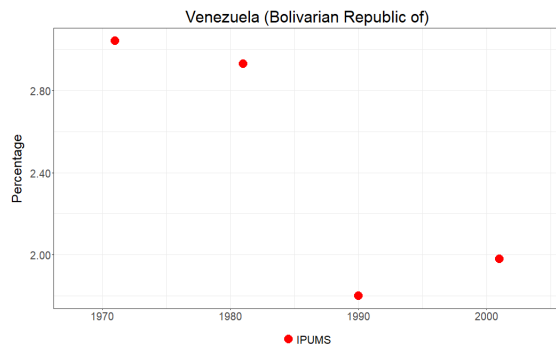
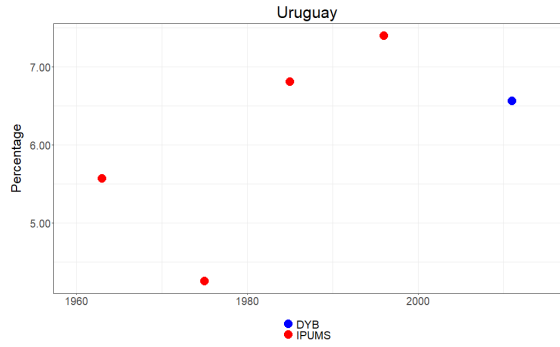
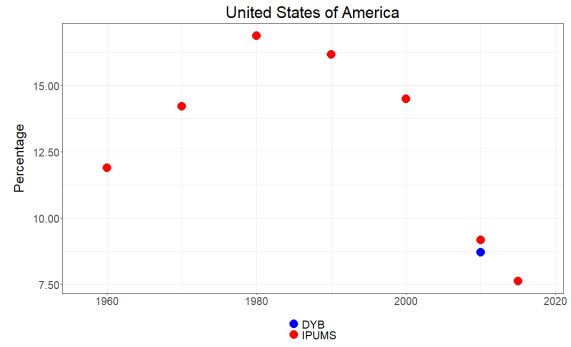
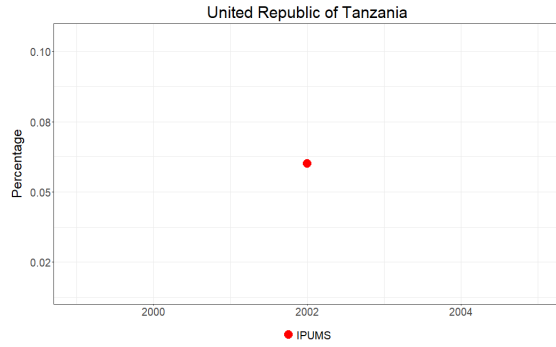












IV. FINAL REMARKS

This technical paper describes the data, definitions, and methods employed to estimate indicators made available in the United Nations Database on Older Persons in Collective Living Quarters. For many countries, the population of older people living in institutions is increasing. However, national census data often lack detailed information on living arrangements, in particular for those in institutions.

The analysis presented here is important for informing policy responses to address the needs of older persons in collective living quarters, including institutions. Data on the living arrangements of older persons are of critical importance in times of health crises, such as the COVID-19 pandemic. Older individuals living in CLQ, especially in institutions, were disproportionately more susceptible to infection and fatalities from COVID-19 than older persons who did not live in institutions. Their heightened vulnerability can be attributed to compromised health, including a suppressed immune system, and their specific living arrangements.

While existing data highlight that regions with a high number of older persons faced elevated risks of COVID-19 cases and fatalities, special attention must be given to areas with significant institutional populations. Older individuals in institutional care may receive the necessary attention, but they also encounter an increased risk of illness and mortality. Therefore, disaggregated data on the percentage of older persons living in collective living quarters, including institutions, is crucial for informed decision-making, resource allocation, and the formulation of policies and services that uphold the health and well-being of older individuals.

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