Global mapping of dependency in older people

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Resumen

Este trabajo aborda las diferencias geográficas en la prevalencia de la dependencia en adultos mayores y sus diferencias por características demográficas (género y edad) dentro y entre países. Se estiman indicadores de dependencia comparables internacionalmente para 31 países de 4 continentes con información disponible sobre necesidades de ayuda en Actividades de la Vida Diaria para personas de 65 años o más. El indicador principal incluye tres actividades: bañarse, comer y vestirse. El mayor nivel de dependencia se observa en Israel (18,5%) y el menor en Suiza (5,5%). Las tasas de dependencia son mayores entre las mujeres, pero las diferencias por sexo sólo aparecen en las personas mayores de 80 años y no son significativas entre las personas de 65 a 79 años. Nuestro análisis corrobora la paradoja de la supervivencia masculina-femenina para la dependencia. Las diferencias encontradas en la prevalencia de la dependencia con respecto al tipo de encuesta es un argumento de peso para la armonización internacional de la formulación de las preguntas sobre dependencia.

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Abstract

This paper addresses the geographical differences in the prevalence of dependency in older adults and its differences by demographic characteristics (gender and age) within and across countries. We estimate internationally comparable dependency indicators for 31 countries in 4 continents with available information on help requirements in Activities of Daily Living for people aged 65 and older. The main indicator includes three activities: bathing, eating, and dressing. The highest level of dependency is found in Israel (18.5%) and the lower in Switzerland (5.5%). Dependency rates are almost always higher for women than for men, but sex differences only appear in people aged 80+ and statistically country differences blur for those aged 65-79. Our analysis supports the male-female survival paradox for dependency. The differences found in the prevalence regarding the family of surveys is a strong argument for the international harmonization of the formulation of the dependency questions.

1. Introduction

Older populations exhibit a higher prevalence of chronic diseases, disability, and dependency stress (At et al., 2015; Prina et al., 2020; Sousa et al., 2010). With ageing, the risk of dependency tends to increase, as functional or mental impairments result from declines in health. Yet, the need for daily help or care of older adults living in the community is heterogeneous and depends on socio-demographic characteristics such as age, sex, or education (Prina et al., 2020). As a result of this heterogeneity and the increased need for support of dependent older adults, national social security and health care systems are usually placed under stress (At et al., 2015; Prina et al., 2020; Sousa et al., 2009, 2010).

The World Health Organization (WHO) defined disability as the negative outcome of the interaction between a health condition and the barriers and facilitators a person has in his or her environment (WHO, 2001). Dependency is defined as the need for human help or care beyond those habitually required by an adult (Harwood et al., 2004). It is a multidimensional construct that refers to functional, psychosocial, and supportive dimensions, and which could also include an economic dimension (Edjolo et al., 2016; Rely et al., 2020).

It is important to distinguish between disability and dependency as separate conceptual constructs (Querejeta, 2004). The need for help is the dividing line between these two constructs. Hence, disability can be measured by the difficulty to perform the Activities of Daily Living (ADL), while dependency can be operationalized as the need for help of another person to perform these activities. In this sense, a person may have a disability but not dependency, as they may struggle to perform certain ADLs but not need the assistance of others to accomplish them.

Focusing on the need for help is relevant for policy analysis given its direct link to the demand for care, which accounts for a large part of the increasing costs associated with an ageing population (Carrera et al 2013, Muir 2017). Further, the dependency prevalence can inform care policies as it allows the identification of met or unmet care needs of individuals. Moreover, understanding the dependency of community-dwelling older people is relevant as more people prefer to age in their homes (Stones and Gullifer 2016, Fernández Carro 2016).

There is an important body of literature reporting disability rates across countries. For instance, Mitra and Sambamoorthi (2013) estimate the disability prevalence for adults using a comparable measure for 54 countries based on the World Health Survey. However, international comparisons on dependency rates do not exist and there is no consensus on how to operationalize dependency nor on how to collect information in population surveys to measure it. Consequently, there is no fully comparable information on dependence across countries. The limited existing evidence on international comparisons also is geographically restricted. Monteverde et al (2016) compare the dependency prevalence in Argentina, Mexico and Spain, and Matus-Lopez and Chaverri-Carbajal (2021) estimate dependency for six Latin American countries. Other studies, as Colombo et al (2011) provide comparable estimates of dependency across the European countries but use a general question that refers to the limitations but not to the need for assistance or help.

The availability of surveys that collect individual information on the need for help to perform Activities of Daily Living (ADLs) is now profuse in the developed world, but still incipient in developing countries. Following the implementation of the Health and Retirement Study (HRS) in the United States in 1992, several countries implemented similar longitudinal surveys directed to older people, including some developing countries. In 2004 the Survey of Health, Ageing, and Retirement of Europe (SHARE project) was launched in Europe, currently comprising 28 countries and 8 waves.

In this paper, we exploit this information and estimate internationally comparable dependency indicators for 31 countries with available information on help requirements in ADLs for people aged 65 and older. Our main goal is to assess the geographical differences in the prevalence of dependency in older adults. We also consider

whether there are differences by demographic characteristics such as gender and age groups within and across countries.

2. Methods

Data

The selection of countries was based on the existence of a nationally representative survey that included information on health, ageing or living conditions for older adults (65 and over), which would allow a harmonized cross-country comparison of dependency. Specifically, we required that the survey inquired about the need for help in the activities of daily living. Also, the survey had to be publicly available or available upon request. We employed baseline waves or waves with sample refreshments to avoid attrition problems. Detailed methods and hypotheses are available via the project preregistration on the Open Science Framework (https://osf.io/m8k6e/).

We evaluated 41 surveys worldwide that were centred on ageing and wellbeing of the older population and excluded 10 studies (9 country-based surveys and one multicentered study) as they did not meet the inclusion criteria (age restrictions, they were not publicly available, did not have specific questions about the need of assistance).[1] Our study incorporates 20 European countries or territories, 5 Asian countries, 5 countries from the Americas, and 1 African country. These countries account for 65 per cent of the global population over 65 years old (66 per cent of the population of Europe, 68 per cent of Asia, 77 per cent of the Americas, and 7 per cent of Africa).[2] The included countries are presented in Table 1, along with the surveys we employed. Supplementary Table 2 provides further details on the surveys and the wording of the questions on help requirements in Activities of Daily Living (ADLs).

We group the countries according to the survey family due to the differences in the wording of the questions that will be addressed in the Variables section. First, we consider all the countries from the SHARE project that included specific questions about the need for assistance. This accounts for 18 European and 1 Asian country (Israel). Second, we consider the surveys that belong to the HRS family of studies: 3 countries of the Americas, 1 African, and 4 Asian). Last, we also consider one country that has information on dependency from a national cross-sectional household survey (Chile). The wording of the questions allows us to present the Chilean results together with the HRS family of surveys.

Table 1. Surveys included in the study.

Survey Family	Survey	Country or territory	Wave	Year
-	CASEN	Chile	-	2015
HRS	CHARLS	China	2	2013
	ELSA	England	7	2014
	ELSI	Brazil	1	2015
	ENCAVIAM	Argentina	1	2012
	HAALSI	South Africa	1	2015
	HART	Thailand	1	2017
	HRS	USA	13	2016
	KLOSA	South Korea	5	2014
	LASI	India	1	2017/19
	MHRS	Mexico	3	2012

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[1] Details of the surveys and the reasons for exclusion are provided in Supplementary Table 1.
[2] Source: World Bank DataBank, World Development Indicators. Population in 2019.

NICOLA	Northern Ireland	1	2013/14
	Austria	1	2004
	Belgium	6	2014
	Croatia	6	2014
	Czech Republic	2	2006
	Denmark	6	2014
	Estonia	6	2014
	France	6	2014
	Germany	2	2006
	Greece	6	2014
SHARE	Ireland	2	2006
	Israel	2	2009
	Italy	6	2014
	Luxembourg	6	2014
	Netherlands	2	2006
	Poland	6	2014
	Slovenia	6	2014
	Spain	2	2006
	Sweden	2	2006
	Switzerland	2	2006

SOURCE: OWN ELABORATION

Variables

The main variable used is the need for help to perform ADL to consistently estimate dependency prevalence in the older population across countries. However, the help requirement is not assessed equally across surveys. As mentioned before, the most relevant difference lies between the HRS-family of studies and SHARE. While the former asks whether a person needs help in each activity, the latter assess firstly whether a person has a difficulty in each task and then whether they require assistance in any of the activities they declared to have difficulty in. As such, dependency measures are not strictly comparable between families of studies, but only within each family.

Also, the activities included are not the same in all surveys. To ensure consistency, we consider a subset of the ADL that is included in all samples and relate directly to the Katz index (Katz et al 1963). These basic activities of daily living have greater comparability and less cultural variation than the instrumental activities proposed by Lawton and Brody (1969). Our main results refer to three activities (bathing, eating, and dressing) that are included in all surveys.

Measures

We estimate the dependency prevalence based on help requirements to perform ADLs. Following Wallace and Herzog (1995) we include three tasks: bathing, eating, and dressing. Any person who declares needing help in performing at least one of these activities is considered dependent. Our main results are based on this indicator of dependency that is available for the 31 countries considered in the study, and we refer to it as ADLWA. For robustness checks, we estimated a second indicator that follows closely the Katz index. We refer to it as ADLA, and it further includes walking across a room and getting in or out of bed. This indicator is not available for Brazil (question on getting in and out of bed not available), and China and South Korea (question on walking across a room not available).

Statistical Methods

We estimate the prevalence of dependency for people aged 65 and over, in total population, and for men and women, while also separating in two age groups (65 to 79, and 80 and over). To compare the prevalence between countries, we employ t-tests on the difference in prevalence for every pair of countries. Due to the large number of tests that were performed, a False Detection Rate adjustment of the p-values is applied (Glickman et al 2014).

We standardize the country-level prevalence of dependency using the demographical structure of the US as per the HRS to obtain more comparable measures of dependency among countries. We apply the age- and sex-specific prevalence of dependency of each country to the demographic structure of the US. This procedure allows us to compare the global dependency rate in older people of the considered countries with the same population structure in terms of age and sex. A similar procedure was followed by Monteverde et al (2016) to compare Mexico, Argentina, and Spain, and by Matus-Lopez and Chaverri-Carbajal (2021) for six Latin American countries.

Let P^j be the prevalence of dependency in country j, we decompose the prevalence as a weighted sum of age- and sex-specific prevalence. p_i^j denotes the group-specific dependency prevalence and s_i^j the share of that group in the total population, so the prevalence of dependency is as follows: $P^j = \sum_i s_i^j \times p_i^j$

Then, we standardize the prevalence by fixing $s_i^j = s_i^{USA}\ \forall j$ such that the standardized prevalence is obtained by the following weighted sum:

$$\widehat{P^J} = \sum_i s_i^{USA} \times p_i^j$$

We consider four age and sex groups: men and women of two age groups (65-80 and 80+). We also performed the standardization using sex and five-year age groups and the results do not vary significantly.[3]

3. Results

Need for assistance in ADL

The prevalence of the need for assistance in each of the five considered activities shows that the most prevalent ADL are bathing and dressing and the less prevalent are eating and walking. See Supplementary data (Table3) for full results. To avoid the differences in dependency across countries, we restrict the analysis to people considered dependent (i.e., those who need assistance in at least one of these activities). For each country, we retrieve the prevalence of the need for help in each of the five ADLs considered for the dependent population. **¡Error! No se encuentra el origen de la referencia.** presents the Kernel densities of the distribution of the prevalence of need for help in each ADL over the 31 countries. Note that the unit of analysis, in this case, is the country, not the individuals.

Bathing and dressing appear to be the activities that dependent people more frequently need assistance with, concentrating their distribution between 50 and 80 per cent. This shows that most of the population that needs assistance with the ADL require help bathing and dressing. Eating and walking are the least frequent activities with 10 to 50 per cent of the dependent population needing help with them.

Figure 1. Density of ADL help requirements. People with dependency aged 65 and over

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[3] Results available upon request.
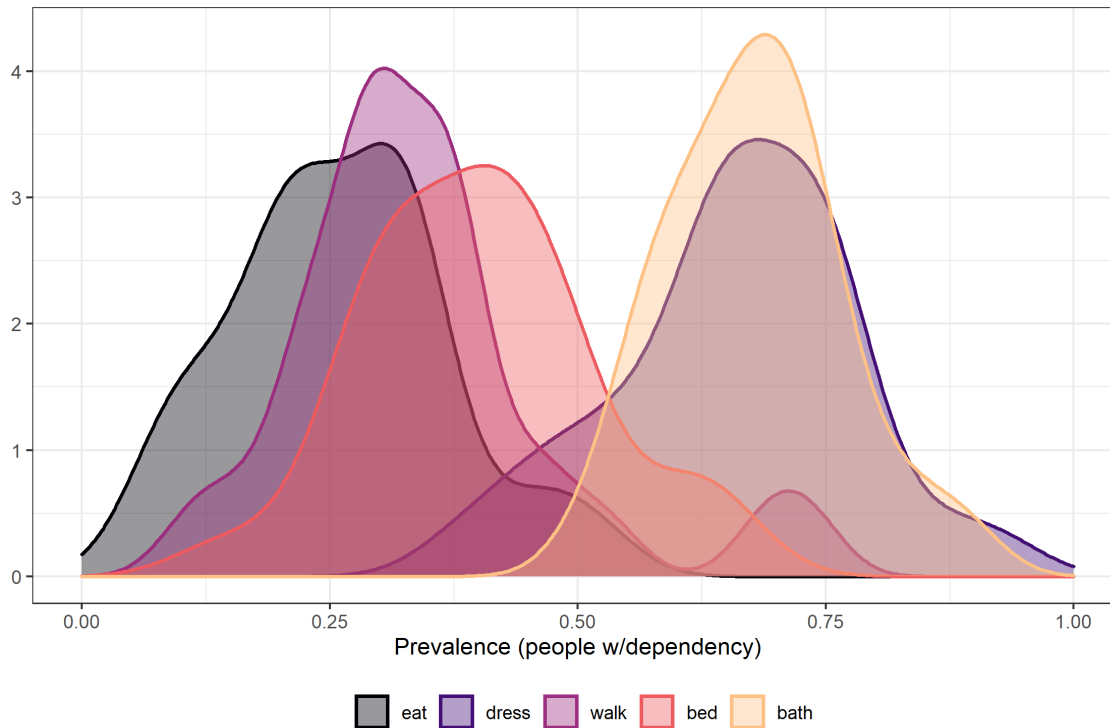
Notes: Kernel densities of the distribution of the prevalence of need for help in each ADL over the 31 countries. Note that the unit of analysis, in this case, is the country, not the individuals. The prevalence of each activity is measured among those who are considered dependent (those who need assistance in at least one of these activities).

Prevalence of dependency

There are large differences in the prevalence of dependency in older people among countries. **¡Error! No se encuentra el origen de la referencia.** presents the prevalence results of ADLWA (bathing, eating, and dressing) separated by the family of surveys, Panel A corresponds to HRS-types of survey and Panel B to the SHARE project. The prevalence of dependency ranges from 5.5 per cent in Switzerland to 18.5 per cent in Israel, both in the SHARE project. Differences among countries are statistically significant (at 5% confidence) in 60.3 per cent of the pairs of countries (Supplementary Table 4). This provides evidence of the important heterogeneity of dependency across countries.

No clear socioeconomic or development gradient emerges in the results as countries with very different development levels have similar dependency prevalence in old age. For instance, Brazil, China, and England have similar prevalence (11.1%, 11.1% and 11.0% respectively), as well as Greece and Sweden (10.5% and 10.4% respectively).

The most striking difference is that most countries in SHARE are among the higher prevalence rates of dependency (see Supplementary Table 3). Also, the range of variation is higher in SHARE than in HRS.

Results for ADLA (bathing, eating and dressing, walking across a room, getting in/out of bed) are very similar regarding country ordering but present higher levels of dependence due to the inclusion of two additional ADL (Supplementary Table 3).

Figure 2. Prevalence of dependency by country. ADLWA grouped by the family of surveys. People aged 65 and over.

Panel A – HRS-Type
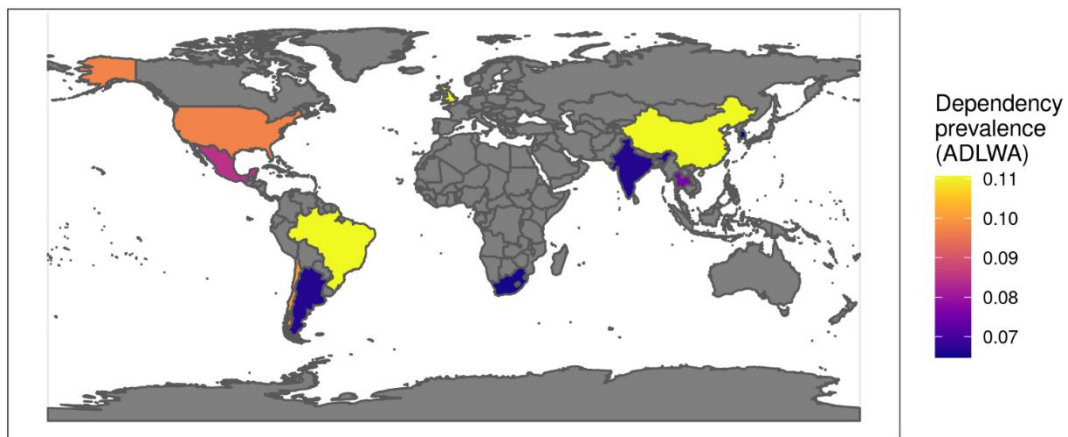
Panel B – SHARE
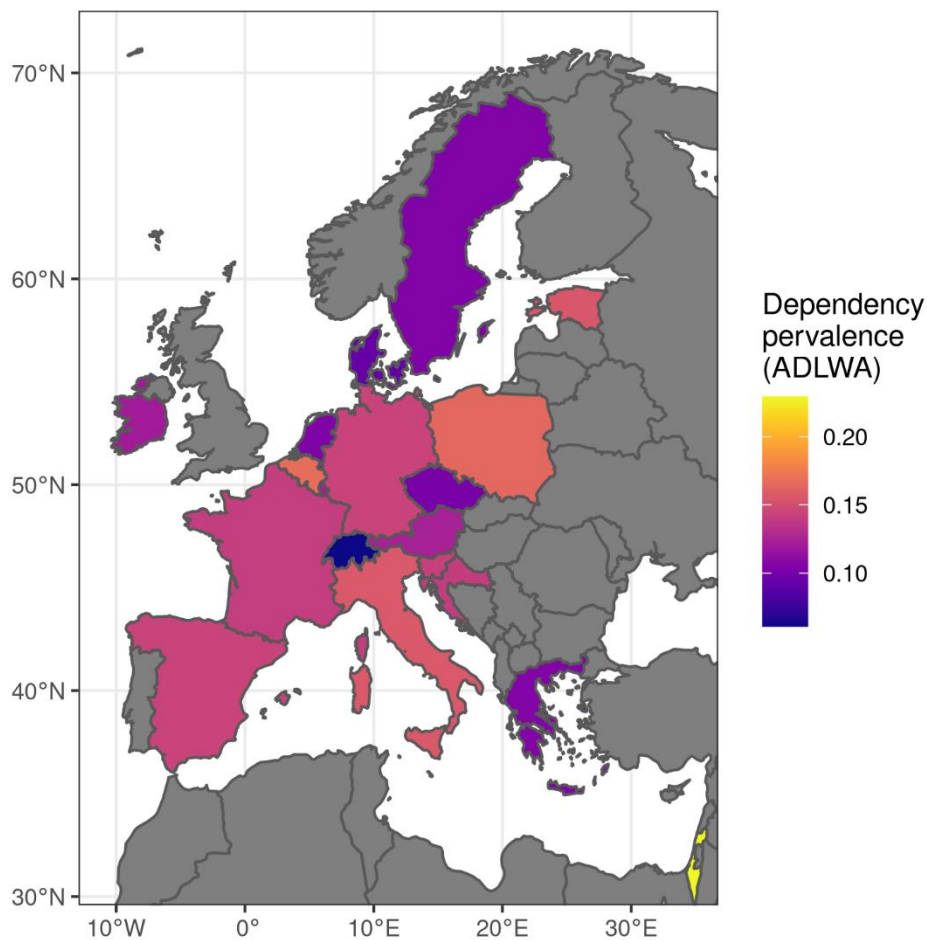
Notes: Dependency prevalence in each country for people aged 65+. Dependency is measured as requiring help in at least one of the following ADLs: bathing, eating, and dressing. Panel A refers to the family of surveys that ask about help requirements via individual ADL questions (HRS-type) and Panel B refers to the surveys which grouped the question (SHARE project). Scales in each panel are independent.

Demographic composition and standardization.

The dispersion across countries may partially reflect the demographic composition of the older population. Dependency increases as people age, so countries with older populations should exhibit higher levels of dependency. Supplementary Table 5 shows the dispersion in our sample of countries in the percentage of people over 65 (ranging from 5.4% in South Africa to 23.0% in Italy); the proportion of people over 80 among the old people (from 13.3% in South Africa to 33.9% in Greece); and the proportion of women in the older population (51.8% in India to 65.5% in Estonia).

To explore the possible effects of the demographic composition of the population, **¡Error! No se encuentra el origen de la referencia.** depicts the countries' dependency prevalence, as measured by ADLWA, over gender and age group. The left panel refers to the family of surveys that ask about help requirements via individual ADL questions (HRS-type) and the right panel refers to the surveys which grouped the question (SHARE project). As expected, dependency prevalence increases with age for men and women. However, it is important to note that women´s rate is only statistically significatively higher than men´s in the older age group. In 28 of the 31 considered countries, the prevalence of dependency in men and women aged 65 to 79 does not differ at 5 per cent confidence. When considering people over 80 years of age, the prevalence of dependency is statistically higher for women in 13 countries. This may be due to differences in the mortality rates of men and women: although men die earlier than women, women experience higher morbidity, disability, and dependency rates, consistent with the "survival paradox" (Alvarado et al 2008, Arber and Cooper 1999, Gomez-Costilla et. al. 2021, Macintyre et al 1996).

In the same sense, differences observed across countries arise mainly from differences in the older cohorts. The observed rates are strikingly similar for people aged 65 to 80, around 8 per cent for the SHARE surveys, and 5 per cent for the HRS-family surveys. Rates for older people vary between 13 and 46 per cent in SHARE and 11 and 27 per cent in HRS-family.

Figure 3. Dependency prevalence by country over gender and age group. ADLWA, ages 65 and over.
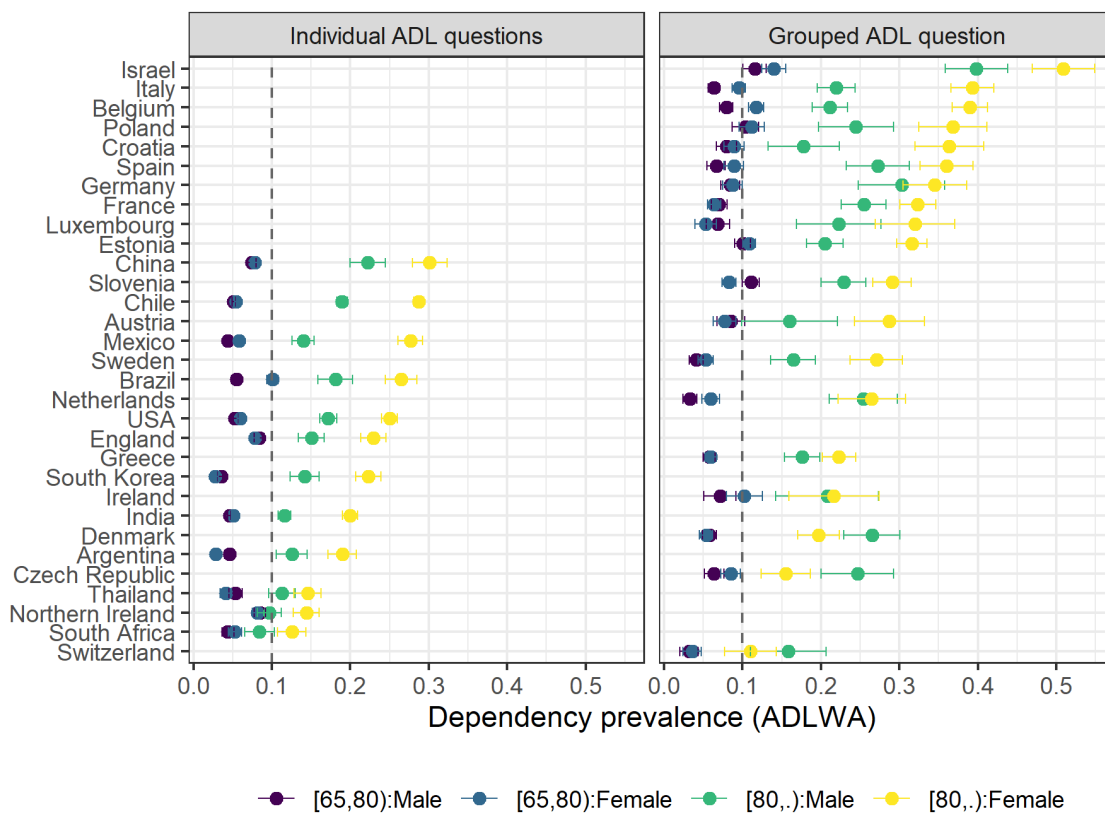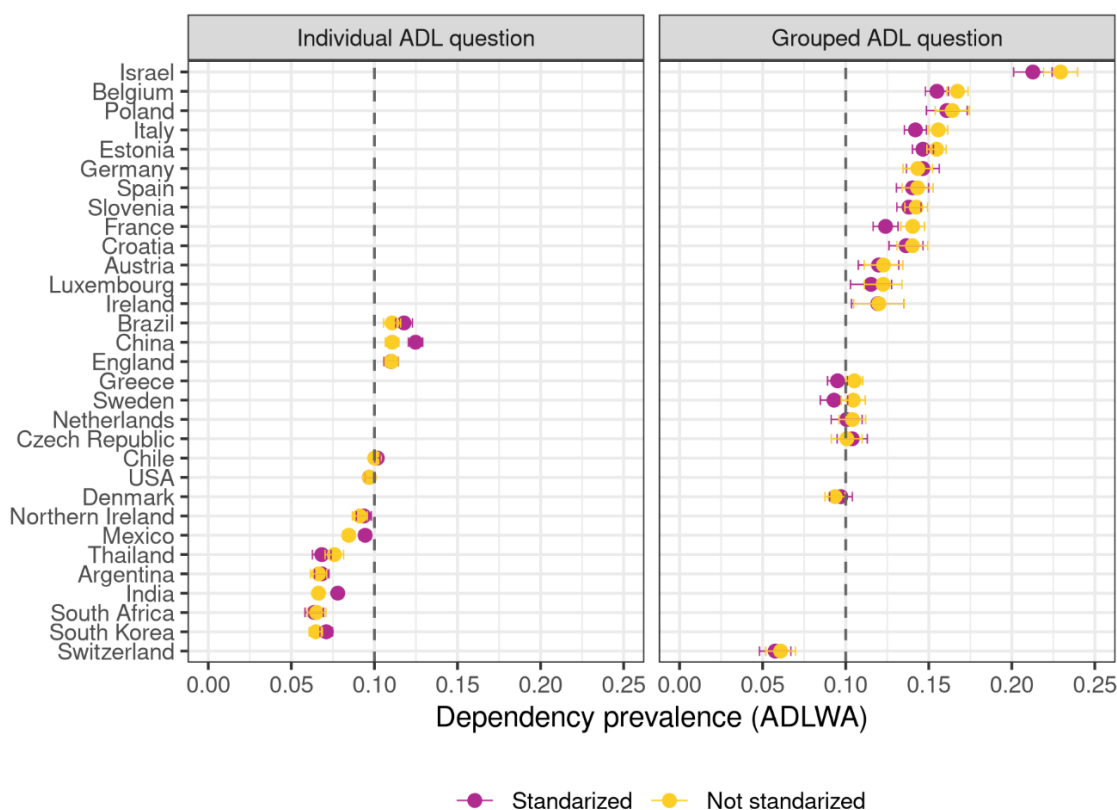

Notes: Dependency prevalence in each country for people men aged 65 to 79, women aged 65 to 79, men aged 80 and more, and women aged 80 and more. Dependency is measured as requiring help in at least one of the following ADLs: bathing, eating, and

dressing. The left panel refers to the family of surveys that ask about help requirements via individual ADL questions (HRS-type) and the right panel refers to the surveys which grouped the question (SHARE project).

To consider the demographic differences of the population in the dependency rate and facilitate the comparisons across countries, **¡Error! No se encuentra el origen de la referencia.** presents the dependency prevalence standardized by the demographic structure of the US. This allows us to compare the global dependency rate in older people of the considered countries using the same population structure (age and sex).

Although dependency rates are more similar between countries after the standardization, prevalence rates do not change dramatically and relevant differences among countries remain unexplained. This implies that differences in the demographic composition of the populations do not fully explain the international variation in dependency rates in people over 65 years old. In general terms, countries that are less advanced than the US in the demographic transition, like India, Brazil, or China, show higher prevalence rates when standardizing; and the opposite happens in European countries that have older populations than the US.

Figure 4. Dependency prevalence standardized by age and gender structure of USA.

Notes: Dependency prevalence in each country for people aged 65+ is standardized by the demographic structure of the US as per the HRS. Age- and sex-specific prevalence of dependency of each country are applied to the demographic structure of the US. Dependency is measured as requiring help in at least one of the following ADLs: bathing, eating, and dressing. The left panel refers to the family of surveys that ask about help requirements via individual ADL questions (HRS-type) and the right panel refers to the surveys which grouped the question (SHARE project).

4. Discussion

Our work reports results on internationally comparable dependency indicators for 31 countries in 4 continents where information on help requirements in ADLs for people aged 65 and older is available. We assess geographical differences in the prevalence of dependency in older adults around the globe: the highest level of dependency is in Israel (18.5%) and the lower in Switzerland (5.5%). The geographical heterogeneity was not fully explained by the demographical composition of the population in terms of age and sex, as

differences remain for standardized measures. Further, our analysis supports the male-female survival paradox for dependency in old age, as older women are significantly more dependent than older men.

Our findings on the prevalence of the need for help in each ADL supports the concept of "hierarchy of disability" and is extended to the need for help, which has been widely documented before (Dunlop et al 1997, Forjaz et al 2015). According to the theory of a hierarchical ordering of needs, there is an ordering and timing in the disability process that translates to the activities in which people have difficulties in performing. In this paper, we conceptually separate disability from dependency, but this hierarchy remains, indicating a progression of the older population into dependency. Our findings suggest that the decline process of dependency progresses from the more advanced activities (bathing and dressing) to the more basic ones (eating and walking). Confirming these results would require longitudinal data, which would be possible with most of the data used in this paper but was beyond its scope.

The international differences in dependency prevalence may be explained by several factors. First, age structure is a possible explanation of the differences as dependency increases with age, and the countries considered are at different stages of the demographic transition. Countries with older populations are expected to have higher dependency rates (At et al., 2015; Prina et al., 2020; Sousa et al., 2010). Second, socio-economic development could play an important role as it informs about the general living conditions of the population (Dorantes-Mendoza et al., 2007, Paredes Arturo et al., 2018). Also, past socioeconomic development, when this population was working, could inform about the labour and living conditions that explain their current health and dependency state (Fujiwara et al., 2008, Herrera Ponce et al., 2011, Cheix Diéguez et al., 2015). Third, the state of development of social protection and care policies may directly affect the dependency prevalence. These programs may not only have an impact on the rehabilitation and adaptation of dependent people but also affect their longevity (Fassio et al., 2015, García Guindo et al., 2017, Arellano Ortiz, 2018). Fourth, cultural factors regarding how dependency is assessed in the community could reflect in individuals´ answers on their need for help in ADL (Capitman et al., 1991, Lai, 2005, O'Brien et al., 2017). Lastly, country-specific situations, such as the participation in armed conflicts in the past among other situations, could also be important to understand international variation (Murray, 2002, Herrera Rivera et al., 2008, Gates et al., 2012, Korinek et al., 2019, Benjet et al., 2020, Jawad et al., 2020).

We explore the role of demographic composition on the prevalence of dependency by estimating it separately for men and women in two age groups. We extend this analysis by standardizing the dependency rates by the demographic structure of the US. Our results showed that differences across countries prevail, which means that the other possible sources of variation are present and strong. The effect of these other factors should be analysed in further studies.

Dependency rates in individuals aged 65 years and over are almost always higher for women than for men. When we partition this age group into two (65-79 and 80+) sex differences only remain in the older group and statistically country differences blur for the younger group. This provides further evidence of the "survival paradox", showing that women live longer but suffer from higher mortality, disability, and dependency.

Lastly, the most striking difference in the country prevalence is that most countries in SHARE rank among the highest in prevalence rates of dependency. This may well be an artefact consequence of the way information about the need for help is collected in SHARE. In the survey, individuals are asked if help is required in any ADL, instead of asking if help is needed in each activity. The range of variation is higher in SHARE than in HRS, which may also be the result of the wording of the ADL module in the surveys. By asking about the need for help in general, the prevalence of dependency in the SHARE project may be overestimated because the need for assistance may refer to needs other than the ones included in the ADLWA index. This indicates that the results are related directly to the formulation of the questions. The SHARE surveys, which ask for the need of help in an aggregated way, regarding all the activities, cast higher prevalence rates in comparison with HRS-type surveys, which ask about needing assistance in each activity. This is a strong argument for the international harmonization of how the questions that appraise dependency are formulated.

Limitations of this study relate to the limited ability to fairly compare estimated dependency. Although all possible cautions have been taken to harmonize the indicators, differences in the wording and contexts of the surveys are unavoidable. Wolf et al (2005) argue that the methodological issues that arise from the operationalization of the disability concept to a population-based measure in surveys could compromise the comparability of the prevalence of disability of different sources. They discuss three measurement problems that could hinder our results: the wording of the questions, the administration of the surveys, and the use of proxy respondents. These arguments could also be valid when studying the prevalence of dependency. The comparison only among the SHARE countries could avoid these problems, as all the countries use the same questionnaires and strategy, but it is constricted to countries from Europe and Israel. However, this does not hold for the HRS-family of surveys. In any case, having restricted our analysis to the use of the "need for assistance" in the wording of the question and utilizing only three ADL may favour the comparability of the measures provided in this paper.

Our study focused on older adults living in private households excluding the institutionalized population. Cambois et al (2016) alert about the bias this restriction may have on disability prevalence of the total population, especially in older adults. The few studies that include the institutionalized population show a significantly higher prevalence of disability in long-term institutions for the older people compared with private households (see for instance Cambois et al 2005). We argue that this limitation also applies to dependency. For international comparisons, as in our case, the difference between the total population and people living in private households depends on national patterns of institution use and supply that are not considered in this study.

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Appendix – Supplementary Material

Table 2. Excluded surveys and reason for exclusion.

Country	Survey	Reason for exclusion
Australia	ALSA	Representative for people over 70
Canada	CLSA	Not available; pay to access
Costa Rica	CRELES	Representative for 10-year cohorts only
Indonesia	IFLS	No refreshment or baseline with ADL
Japan	JSTAR	Representative of people over 50 and under 75
Malasia	MARS	Requested, pending approval
Scotland	HAGIS	Only pilot is available
-	SAGE	No questions on ADL help requirements

Source: Own elaboration

Table 3. Survey characteristics

Survey	Country or Territory	Type	Wave	Year	Population age	Dependency Q's
CASEN	Chile	Cross-sectional	-	2015	15+	For those who respond that they have some level of difficulty: And considering only your health status, how often do you receive help from another person for (activity)?
CHARLS	China	Longitudinal	2	2013	45+	Does anyone help you with…?
ELSA	England	Longitudinal	7	2014	50+	Received help from anyone with…? [First activity] What about…? [following activities]
ELSI	Brazil	Longitudinal	1	2015	50+	Do you get any help with …? (no, doesn't have anyone | yes)
ENCAVIAM	Argentina	Cross-sectional	1	2012	60+	Do you need help from a person to…?
HAALSI	South Africa	Longitudinal	1	2015	40+	Does anyone ever help you with…?
HART	Thailand	Longitudinal	1	2017	45+	Q: In the last week, do you have the following difficulties? (excluding any difficulty that you expect to last less than 3 months) A: Able to do it all by myself/Need helps sometimes or some steps/Always need help in some steps/Need helps for all steps
HRS	USA	Longitudinal	13	2016	51+	Does anyone ever help you…?
KLOSA	South Korea	Longitudinal	5	2014	45+	Do you have difficulties with..? Do you need someone to help you with that?
LASI	India	Cross-sectional	1	2017/19	45+	Does anyone ever help you with these difficulties you mentioned before?
MHRS	Mexico	Longitudinal	3	2012	50+	Does anyone ever help you with…?
NICOLA	Northern Ireland	Longitudinal	1	2013/14	50+	Does anyone ever help you with…?

SHARE	Europe	Longitudinal	–––	–––	50+	Due to a physical, mental, emotional or memory problem, do you have any difficulty performing these activities? Do not consider the ones you think you will be able to do in three months or less. [asks one question per activity] Do you receive help to perform them? [refers to all previous activities]

Table 4. ADL help requirements by ADL and country.

Country	Require help to...					ADLWA	ADLA	N
	eat	dress	bath	walk	bed			
Austria	3.0%	9.0%	9.0%	3.0%	4.3%	12.3%	13.3%	729
Germany	5.3%	10.1%	10.9%	4.3%	5.3%	14.3%	15.2%	1259
Sweden	3.6%	7.3%	7.0%	4.3%	3.9%	10.5%	11.3%	1388
Netherlands	2.3%	6.2%	8.0%	3.1%	2.8%	10.4%	11.2%	1076
Spain	4.8%	11.3%	11.6%	5.6%	7.3%	14.3%	14.8%	1310
Italy	4.5%	11.6%	13.0%	5.8%	7.6%	15.6%	16.2%	2976
France	2.9%	11.1%	9.5%	4.3%	4.5%	14.0%	14.7%	2153
Denmark	1.8%	7.3%	7.0%	3.6%	3.0%	9.4%	9.7%	1814
Greece	2.1%	7.7%	8.0%	3.3%	4.7%	10.5%	11.5%	2623
Switzerland	0.7%	3.4%	4.3%	1.0%	1.0%	6.1%	6.4%	641
Belgium	3.7%	10.9%	13.1%	4.0%	5.0%	16.7%	17.4%	2895
Israel	7.6%	20.2%	17.4%	8.8%	12.0%	22.9%	23.5%	1314
Czech Republic	1.0%	7.0%	6.6%	3.5%	4.7%	10.1%	10.9%	1101
Poland	5.6%	13.0%	13.1%	6.1%	8.0%	16.4%	17.5%	910
Ireland	1.6%	7.9%	8.9%	4.1%	4.0%	12.0%	13.3%	423
Luxembourg	4.3%	9.4%	9.5%	3.7%	5.3%	12.3%	12.9%	704
Slovenia	3.5%	11.5%	9.4%	4.7%	6.2%	14.2%	15.2%	2308
Estonia	3.8%	10.4%	11.5%	5.1%	6.7%	15.5%	16.4%	3277
Croatia	4.3%	10.1%	10.4%	3.2%	6.8%	14.0%	15.1%	1154
Chile	3.8%	6.9%	8.6%	9.0%	5.9%	10.0%	12.3%	35904
China	3.5%	5.1%	9.9%		4.1%	11.1%		5307
England	2.9%	8.7%	7.6%	2.7%	3.6%	11.0%	11.5%	5591
Brazil	2.1%	9.6%	6.2%	4.8%		11.1%		3860
South Africa	1.2%	4.7%	5.7%	6.9%	6.2%	6.5%	9.8%	1978
USA	2.5%	7.4%	7.0%	4.9%	4.3%	9.7%	10.8%	9994
South Korea	3.5%	4.4%	6.1%		4.5%	6.5%		4226
Mexico	3.6%	3.9%	5.8%	4.8%	4.2%	8.5%	10.1%	7201
India	4.3%	4.5%	5.1%	4.8%	5.5%	6.6%	8.1%	21343
Thailand	3.3%	7.0%	4.6%			7.6%		2228
Northern Ireland	0.7%	7.0%	5.4%	1.1%	2.5%	9.1%	9.6%	4098
Argentina	2.5%	4.9%	5.2%	2.6%	3.6%	6.6%	7.2%	3291

Source: Own elaboration

Table 5.. p-values of pairwise t-tests of means difference in ADLWA between countries with FDR adjustment. Countries ranked by prevalence.

	CHE-S	ZAF	IND	KOR	THA	NLD-S	DNK-S	GRC-S	SWE-S	ARG	MEX	NIR	GBR	CHN	CHL	LUX-S	CZE-S	IRL-S	HRV-S	AUT-S	BRA	ITA-S	USA	DEU-S	SVN-S	FRA-S	POL-S	EST-S	ESP-S	BEL-S
ZAF	0.404																													
IND	0.306	0.932																												
KOR	0.151	0.460	0.291																											
THA	0.080	0.231	0.125	0.543																										
NLD-S	0.100	0.276	0.218	0.545	0.912																									
DNK-S	0.055	0.159	0.076	0.380	0.814	0.938																								
GRC-S	0.017	0.044	0.005	0.125	0.481	0.687	0.698																							
SWE-S	0.033	0.094	0.046	0.225	0.548	0.706	0.724	0.984																						
ARG	0.004	0.006	0.000	0.019	0.176	0.350	0.308	0.522	0.637																					
MEX	0.001	0.000	0.000	0.000	0.041	0.170	0.105	0.204	0.350	0.628																				
NIR	0.001	0.001	0.000	0.002	0.054	0.176	0.121	0.224	0.350	0.610	0.932																			
GBR	0.000	0.000	0.000	0.000	0.004	0.045	0.017	0.032	0.105	0.162	0.276	0.390																		
CHN	0.000	0.000	0.000	0.000	0.004	0.045	0.017	0.032	0.105	0.163	0.277	0.390	0.995																	
CHL	0.000	0.000	0.000	0.000	0.000	0.021	0.004	0.005	0.056	0.061	0.081	0.218	0.885	0.891																
LUX-S	0.002	0.006	0.003	0.016	0.056	0.100	0.088	0.135	0.177	0.271	0.374	0.413	0.706	0.708	0.732															
CZE-S	0.000	0.001	0.000	0.002	0.013	0.038	0.025	0.045	0.077	0.121	0.187	0.225	0.478	0.481	0.492	0.885														
IRL-S	0.005	0.014	0.010	0.029	0.067	0.100	0.094	0.134	0.160	0.231	0.307	0.330	0.524	0.525	0.543	0.789	0.885													
HRV-S	0.000	0.000	0.000	0.000	0.003	0.012	0.006	0.012	0.026	0.041	0.064	0.087	0.225	0.226	0.222	0.637	0.724	0.921												
AUT-S	0.000	0.001	0.000	0.003	0.013	0.030	0.022	0.038	0.058	0.091	0.132	0.158	0.317	0.319	0.323	0.668	0.744	0.921	0.994											
BRA	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.001	0.000	0.000	0.001	0.011	0.012	0.003	0.381	0.424	0.744	0.744	0.800										
ITA-S	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.001	0.001	0.001	0.002	0.017	0.018	0.007	0.388	0.433	0.744	0.745	0.800	0.996									
USA	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.001	0.000	0.307	0.326	0.693	0.650	0.724	0.877	0.885								
DEU-S	0.000	0.000	0.000	0.000	0.000	0.002	0.001	0.002	0.006	0.008	0.013	0.020	0.073	0.074	0.063	0.394	0.445	0.715	0.717	0.752	0.910	0.912	0.984							
SVN-S	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.066	0.057	0.268	0.146	0.225	0.125	0.141	0.112	0.305						
FRA-S	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.057	0.049	0.242	0.125	0.200	0.105	0.119	0.093	0.268	0.921					
POL-S	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.001	0.001	0.004	0.005	0.003	0.094	0.094	0.281	0.195	0.255	0.217	0.225	0.223	0.345	0.921	0.987				
EST-S	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.008	0.004	0.093	0.018	0.052	0.004	0.006	0.001	0.055	0.350	0.426	0.561			
ESP-S	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.011	0.008	0.080	0.024	0.051	0.015	0.017	0.012	0.060	0.291	0.341	0.435	0.740		
BEL-S	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.001	0.000	0.027	0.002	0.009	0.000	0.000	0.000	0.007	0.064	0.091	0.195	0.319	0.702	
ISR-S	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.005	0.005

Source: Own elaboration

Table 6. Share of pop. ages 65 and up, share of pop. ages 80 up over pop. 65 and up, Share of female population ages 65 and up

Country	Pop. 65+ (%)	Pop. 80+ / Pop. 65+ (%)	Female pop. 65+ (%)
Argentina	11,2	23,5	59,1
Austria	19,1	27,9	56,6
Belgium	19,0	30,0	56,1
Brazil	9,3	20,4	56,9
Switzerland	18,8	27,7	54,9
Chile	11,9	23,2	56,9
China	11,5	15,9	53,0
Czech Republic	19,8	20,8	57,8
Germany	21,6	31,9	56,2
Denmark	20,0	23,1	53,9
Spain	19,6	31,6	56,6
Estonia	20,0	29,2	65,5
France	20,4	30,3	56,9
Great Britain	18,5	27,4	54,1
Greece	21,9	33,9	55,7
Croatia	20,9	27,4	59,9
India	6,4	15,0	51,8
Ireland	14,2	21,9	53,0
Israel	12,2	24,9	55,4
Italy	23,0	32,0	56,5
South Korea	15,1	22,7	57,0
Luxembourg	14,3	28,0	54,6
Mexico	7,4	21,2	55,1
Netherlands	19,6	24,5	53,7
Poland	18,1	25,3	60,5
Slovenia	20,2	26,8	57,1
Sweden	20,2	25,8	53,5
Thailand	12,4	21,4	56,4
USA	16,2	24,2	55,2
South Africa	5,4	13,3	60,5

Source: Own elaboration