UAB
Universitat Autònoma de Barcelona

PhD Programme in Demography

PhD Thesis

A SOCIO-LEGAL ANALYSIS OF HEALTH OUTCOMES, DISPARITIES AND DETERMINANTS AMONG MIGRANT AND NATIVE WOMEN IN SPAIN

Hortense Fraser

Supervisors:

Dr. Jeroen Spijker

Dr. Iñaki Permanyer

Tutor:

Dr. Jeroen Spijker

Universitat Autònoma de Barcelona (UAB)

Departament de Geografia – Centre d'Estudis Demogràfics

March 2023

DEDICATION

I would like to dedicate this paper to my family. The obstacles that I have had to overcome have been tremendous, but I have managed to pull through successfully because I did this for you. Being the first is never easy, but now that it is done, I pray that I have paved the way for the rest of you.

ACKNOWLEDGEMENT

TABLE OF CONTENTS	PAGES

LIST OF TABLES

Introduction

Background

The international human rights framework on the right to health, recognizes the importance laws and policies in promoting and fulfilling the right to health, and calls for laws and policies to help realize the right. Yet, there are also numerous examples illustrating that laws and policies can serve to impede the advancement of the right to health, by creating barriers, especially among those most vulnerable. Migrant groups, especially those from low-income countries have been recognized as being among the most disadvantaged (CESR, 2000), and accordingly a regulatory framework for considering migrants right to health from a human rights perspective also exist. Indeed, in Spain, health outcomes have been found to be more adverse among migrant women as compared to native women (Gotsens et al. 2015; Garcia-Subitrats 2014; Regidor et al. 2014; Larrañaga, Martin and Bacigalupe; Juarez et al., 2019), related to social, legal and other barriers to access to health services (Legido-Quigley et al. 2013; Vázquez & Ambler 2014). Accordingly, there has been advocacy within the regional and international community for consideration of the implications of health laws and policies on health outcomes, disparities, and determinants of health (World Health Organization).

In this study, using the case of Spain, the importance and operation of laws in advancing the right to health agenda, including sexual and reproductive health rights, which is espoused in various regional and international human rights treaties, instruments and consensus documents, is explored. Sexual and reproductive rights form the crux of the rights analysed herein, because even though these rights have been recognized as human rights, thereby forming part of the right to health agenda, it has been indicated that in the context of Europe, including Spain, focus on, and development in this area, has not kept pace with the overall right to health agenda. This is despite a feminization of the migration process in Spain, and a significant number of migrant women being in reproductive ages (Vidal-Coso and Miret-Gamundi, 2014; Alvarez-Nieto, 2015; Fernandez, Cavanillas and de Mateo, 2010).

Against the background of a high and increasing migrant population in Spain, with the foreign population representing approximately 11 per cent of the entire population in 2019 (INE, 2021), Spain has generally been progressively responsive to regional and international consensus

1

regarding the advancement of the right to health, including recognizing and addressing health inequalities and disparities due to unequal access to health services among migrant women. Accordingly, a significant part of the advancement of the right to health agenda in Spain has been the introduction of legislations and policies aimed at addressing social cohesion, integration and equity, as well as bringing Spain into conformity with progressive standards in realizing sexual and reproductive health rights.

The most important legal reference is Organic Law 4/2000, which focused on the rights and liberties of foreigners in Spain, as well as their social integration. This law guaranteed, among other social benefits, universal access to primary health care, irrespective of migration status, provided that, migrants were documented. For those persons not registered, they could only benefit from emergency care, whilst children under 18 as well as pregnant women, would have their health needs fully covered irrespective of their legal status. The implication was that health disparities between migrants and natives, as well as disparities between migrants from low-income countries and those from higher-income countries, would be addressed.

The most critical legal reference with respect to sexual and reproductive health, is Organic Law 2/2010 (Law 2/2010), as it recognized and guaranteed fundamental rights in sexual and reproductive health, in addition to decriminalising the voluntary interruption of pregnancy, up to fourteen weeks of pregnancy generally, and up to twenty-two weeks if there is a serious risk to the life or health of the pregnant woman or foetus. As the denial of access to safe and legal abortions violates the right to health and runs contrary to the protection, promotion and fulfilment of sexual and reproductive rights contemplated by regional and international law, this law was of critical importance in advancing the sexual and reproductive health rights agenda.

Justification of the Study
Noteworthy, the economic crisis which started in 2008, led to fiscal, social as well as legislative changes in Spain, which were expected to have significant repercussions for the advancements made in the right to health agenda, including negative consequences on health outcomes and health disparities. The most notable development was the introduction of Organic Law 16/2012. In the year 2012, the Spanish Government issued Royal Decree 16/2012 (Law 16/2012) which saw a

transition from a National Healthcare System (NHS) to an insurance model. Effectively, healthcare entitlements under Organic Law 4/2000 were no longer guaranteed, especially for migrants, as coverage was now more explicitly linked to social security entitlements. Several non-residents, specifically undocumented migrants, lost their right to primary healthcare, except for, emergency services, some aspects of maternal health, and children under 18 years of age. Meanwhile, it has been suggested that access to health was not guaranteed even for migrants included in the coverage of Law 16/2012 (Morena Beltran and Ballesteros Pena, 2015).

Indeed, studies have shown that social, economic, political and legal restrictions affect the deterioration of health, while increasing social inequalities in health due to barriers that hinder access, use, and navigation of health services (Legido-Quigley et al. 2013; Vázquez and Ambler 2014; Juarez et al., 2019). In a similar vein, the legislative changes are expected to adversely affect reproductive health outcomes, particularly among migrants, and potentially lead to greater inequalities and disparities between migrants compared to the native population, as well as between different groups of migrants. Yet, notwithstanding the expected implications of the legislative development, particularly for migrant women, studies addressing the impact of Law 16/2012 on sexual and reproductive health outcomes (as distinct from use and access) have been limited (Gogishvili et al., 2021; Perez-Molina and Pulido Ortega, 2012; Gogishvili et al., 2021; Morena Beltran and Ballesteros Pena, 2015; Larrañaga, Martin and Bacigalupe), and even fewer provide an analysis based on nationality differentials (Ruiz-Ramos et al., 2012). However, as one study has indicated, the sexual and reproductive health needs of migrants are pressing (Bosmans and Temmerman, 2005).

As well, in another study highlighting the situation within the European Union, the authors posit that, while there is a generally proclaimed rights based approach to health, the strategies geared at addressing health among migrants often times fail to address sexual and reproductive health and are generally limited to perinatal care and HIV screening (Keygnaerta et al., 2014), thereby justifying the need for more research in the area of sexual and reproductive health. In addition, it is necessary to consider heterogeneity and differences in the sexual and reproductive health outcomes of migrant women, as inequality in health outcomes between migrants from low-income and high-income countries have been found to persist in Europe generally, and therefore is

expected within Spain (Pellico Lopez, 2022; Van Lancker, 2015). It is important to note however, that differentiating between health impacts that are a consequence of the economic crisis and those resulting from the implementation of Law 16/2012 can be a complex process, and therefore some studies focussed on the impact of the economic crisis, do make estimations as to the impact of the law based on the findings elucidated. Still, beyond policy studies, a dearth of studies addresses the impact of the law on sexual and reproductive health outcomes.

One of the most fundamental questions which arose from the law's implementation concerned its legality, and compliance with the regional and international regulatory framework on the right to health. The question of legality and compliance is crucial, particularly in view of the fact that several implications of the law were expected. In addition, the law's introduction provided an important opportunity to consider how an economic crisis shapes the right to health agenda and to determine what the precedent should be, relative to a derogation of the right to health, during an economic crisis. As the law implied greater barriers for migrants, especially those undocumented, included among the expected impact of the application of the law, was poorer health outcomes, especially among migrants, and an increase in health inequalities and inequities between migrants and Spanish nationals. Evidently, these expected outcomes run contrary to the right to health agenda contemplated by regional and international law and consensus.

Moreover, while Law 2/2010 was expected to increase access to abortions, generally without legal penalties, and thus, bring Spain into conformity with regional and international consensus, the law was expected to operate within the framework of Law 16/2012. Even if it could be argued that there is paramountcy of Law 2/2010 over Law 16/2012, it was still expected that the access to abortions guaranteed under the former law, would be circumscribed by Law 16/2012, particularly for migrants from low-income countries. Accordingly, notwithstanding the liberal regulatory framework, it was expected that some groups would continue to face barriers to access to abortions, in part, related to Law 16/2012.

Beyond the anticipated disparities in access to abortions noted above, another important issue which arose due to the introduction of Law 2/2010 was the controversy surrounding its impact on abortion numbers. Although the law was arguably a progressive legislation regarding sexual and

reproductive rights, it was met with opposition by those who argued, without empirical support, that it would result in significant increases in the number of abortions, contrary to international consensus for States to introduce policies aimed at decreasing abortions. While the issue of whether the law runs afoul of other international agreements and consensus is a legal question outside the scope of this study, an assessment is still warranted as to the impact of the law on abortion numbers. Indeed, there is international consensus to reduce number of abortions, but the international legal framework requires such reduction to be accomplished in tandem with the right of women to safe and legal abortions. The fact is, the right balance must be struck between these two goals. Accordingly, having regard to greater barriers expected to be faced by some migrant women, notwithstanding the more liberal legislative climate for abortions, slower increases in the number of abortions would be expected among some groups, particularly migrants from low-income countries, but in a manner that ought to be more concerning than celebrated. In that, the slower increases may likely be attributable to greater barriers faced by some migrants, and not substantially due to a reduction in the recourse to induced abortions because of expanded and improved family planning services.

Finally, in maintaining the balance between reduced numbers of abortions and the right of access to safe and legal abortions, socio-economic, cultural and other factors are implicated. It was expected that the exposure to the risk of an elective abortion under Law 2/2010 would not be the same for all women, and that socio-economic status may determine such risks, differentially for women from higher income countries compared to those from low-income countries. Moreover, it is likely that the introduction of Law 2/2010 may have shaped reasons for abortions (that is medical or elective); while Law 16/2012 as well as the amendment in 2015, may have altered or modified the determinants of elective abortions.

Objectives

Indeed, laws are critical to realizing and advancing the right to health agenda contemplated by regional and international law, but they can also act as, or create barriers to health access. Whereas the World Health Organization's, Health in All Policy approach calls for monitoring and assessment of the impact of policies on health outcomes, disparities and determinants of health in order to improve population health and equity, and whereas in Spain, studies on the subject matter

of sexual and reproductive health have been limited, let alone studies concerning the impact of laws on sexual and reproductive health outcomes. This study aims to provide a thorough assessment of how laws have helped to shape different health outcomes and disparities in Spain, as well as determinants of health outcomes. A critical aspect of this study is not only the inclusion of at least two major legislations, but important nationality stratification which has been largely missing from the literature is undertaken in this study. To this end, the aim is to provide an understanding of the impact of laws on health outcomes based on different nationality groupings, to address gaps in the literature, and to introduce new evidence on the impact of laws on health outcomes, disparities and determinants in a more thorough, comprehensive and nuanced manner than previous work. The findings of the study will provide evidence upon which policies, laws and other interventions can be developed and improved in an effort to provide better care to migrant women, particularly those most disadvantaged.

Overview of Chapters and Research Questions

To investigate the issues described above, four chapters were included in this study. Chapter one commences with an analysis of the right to health under regional and international law. The aim in this chapter was to determine Spain's obligation regarding the right to health, under regional and international law, and to explore the extent to which Spain's introduction of Law 16/2012, complied with its duties and obligations under such laws. More specifically, we sought to determine whether an economic crisis, which formed the basis of the introduction of the law, provides a ground upon which the progressive realization of the right to health can be derogated from. The methodology employed in this chapter was a review of the extant law, and other literature, on the right to health. The specific research questions in this chapter are as follows:

1. Are Spain's domestic laws on the right to health in line with regional and international laws?

2. Is there an obligation on Spain to provide a right of access to public health systems for migrants?

3. If the right contemplated in question 2 exists, are there circumstances under which such rights can be derogated from?

4. Is an economic crisis a ground on which the right to health can be derogated from?

5. Is Spain's Organic Law 16/2012 a breach of international and regional obligations regarding the right to health?

This paper was submitted to the American Journal of Public Health, hence the variation in the referencing style (i.e., footnotes), as compared to the other chapters.

In chapter two, an empirical assessment is conducted, of the impact of Law 16/2012 on four health outcomes, namely: self-perceived health, mental health, mammogram screening and cervical screening, among native and migrant women, 25-64 years living in Spain. As previously noted, addressing sexual and reproductive health issues is of great importance, and the prevention and treatment of malignancies of reproductive organs, are critical components of sexual and reproductive health. Self-perceived health was also included as a variable, because it is well-known in the literature to be an accurate and appropriate indicator of access to health, thereby implicating health outcomes and health disparities. Finally, mental health was included because of its importance as a health indicator, as espoused in the World Health Organization's definition of health, defined as a state of complete physical as well as mental well-being. We employ descriptive analysis, as well as logistic regression estimates, pre-post comparisons, in an attempt to isolate the effects of the law change on our health outcomes. In addition, because of the importance of duration of residence on outcomes among migrants, we also assessed whether there is any empirical support for duration effects. In this regard, two categories of migrants were classified: short-term (women living in Spain for less than 10 years); and long-term (women living in Spain for 10 years or more). The main research questions that we aimed to answer in this chapter were:

1. What is the impact, if any of Law 16/2012 on self-perceived health, mental health, cervical screening and mammogram screening among women in Spain?
2. Does the impact of Law 16/2012 vary according to native or migrant status?

In chapter three, we assessed, among native and migrant women, 15-49 years living in Spain, whether there is empirical support for the position that Law 2/2010 (a relatively liberal abortion law), would significantly alter abortions rates in Spain. Understanding abortion numbers is critical, as they provide an indication as to the frequency of unwanted pregnancy and unmet family planning needs and alludes to the effectiveness of family planning services. We used time series data for the period 2003-1017 and employ descriptive statistics, pre-post comparisons, as well as

interrupted time series analysis (ITS), specifically ARIMA modelling, to determine the outcome of interest. The main research questions are as follows:

1. Have the rates of abortion changed since the introduction of Law 2/2010?
2. What are the pre-intervention and post-intervention trends in abortion rates?
3. If the rates of abortions have changed since the introduction of Law 2/2010, are the changes statistically significant such that they are attributable to Law 2/2010?
4. Are there differences in the impact of Law 2/2010 according to native or migrant status?

In chapter four, we assess, the profiles of native and migrant women 15-49 years performing an abortion in Spain, and the factors affecting the likelihood of an elective abortion. As such, we determine whether these profiles and factors, changed or were modified over time between 2011 and 2017, against the background of different legal developments in Spain. With the liberalization of the law, social determinants contemplated by the WHO's HiAP becomes even more critical to our understanding of where programs targeting a reduction in recourse to abortions should be directed. We first carried out univariate analysis aimed at describing our population under study, according to nationality. Logistic regressions were then performed to predict the likelihood of an elective abortion based on age, education, employment status, nationality, living arrangements, number of children and number of previous abortions. The main research questions are as follows:

1. What are the factors affecting the likelihood of an elective abortion?
2. Do the factors differ based on nationality or change over time?

Finally, in chapter five, a general discussion of the main findings, implications and recommendations is undertaken.

References

Alvarez-Nieto, C., Pastor-Moreno, G., Grande-Gascón, M.L. and Linares-Abad, M. (2015). Sexual and reproductive health beliefs and practices of female immigrants in Spain: a qualitative study. *Reproductive Health*, 12(1). doi:10.1186/s12978-015-0071-2.

Anne VAN LANCKER (2015). *Report on sexual and reproductive health and rights - Committee on Women's Rights and Equal Opportunities | A5-0223/2002 | European Parliament*. [online] Europa.eu. Available at: https://www.europarl.europa.eu/doceo/document/A-5-2002-0223_EN.html [Accessed 8 Dec. 2022].

Committe on Economic, Social and Cultural Rights. (2000). *CESCR General Comment No. 14: The Right to the Highest Attainable Standard of Health (Art. 12)*. [online] Available at: https://www.refworld.org/pdfid/4538838d0.pdf.

Fernandez, M.A.L., Cavanillas, A.B. and de Mateo, S. (2010). Differences in the reproductive pattern and low birthweight by maternal country of origin in Spain, 1996-2006. *The European Journal of Public Health*, [online] 21(1), pp.104–108. doi:10.1093/eurpub/ckp224.

Garcia-Subirats, I., Vargas, I., Sanz-Barbero, B., Malmusi, D., Ronda, E., Ballesta, M. and Vázquez, M. (2014). Changes in Access to Health Services of the Immigrant and Native-Born Population in Spain in the Context of Economic Crisis. *International Journal of Environmental Research and Public Health*, [online] 11(10), pp.10182–10201. doi:10.3390/ijerph111010182.

Gogishvili, M., Huang, T.T.-K., Costa, S.A., Florez, K., Mateu-Gelabert, P., Valls, M.R.A., Rivero, M., Saumoy, M., Samperiz, G., Cervero, M., Pulido, F., Pérez, J.A. and Cohort of the Spanish AIDs Research Network (2021b). Late HIV diagnosis among immigrants in Spain vs. native-born Spaniards, 2010-15. *European Journal of Public Health*, [online] 31(6), pp.1123–1128. doi:10.1093/eurpub/ckab089.

Gogishvili, M., Costa, S.A., Flórez, K. and Huang, T.T. (2021a). Policy implementation analysis on access to healthcare among undocumented immigrants in seven autonomous communities of Spain, 2012–2018. *BMJ Open*, 11(6), p.e045626. doi:10.1136/bmjopen-2020-045626.

Gotsens, M., Malmusi, D., Villarroel, N., Vives-Cases, C., Garcia-Subirats, I., Hernando, C. and Borrell, C. (2015). Health inequality between immigrants and natives in Spain: the loss of the healthy immigrant effect in times of economic crisis. *The European Journal of Public Health*, [online] 25(6), pp.923–929. doi:10.1093/eurpub/ckv126.

Janssens, K., Bosmans, M., Foster, L. and Temmerman, M. (2005). *Sexual and Reproductive Health and Rights of Refugee Women in Europe. International Workshop, 17-19 January 2005, Gent, Belgium*. [online] *biblio.ugent.be*. Academia Press. Available at: https://biblio.ugent.be/publication/343676 [Accessed 22 Dec. 2022].
Juárez, S.P., Honkaniemi, H., Dunlavy, A.C., Aldridge, R.W., Barreto, M.L., Katikireddi, S.V. and Rostila, M. (2019). Effects of non-health-targeted policies on migrant health: a systematic review and meta-analysis. *The Lancet Global Health*, 7(4), pp.e420–e435. doi:10.1016/s2214-109x(18)30560-6.

Keygnaert, I., Guieu, A., Ooms, G., Vettenburg, N., Temmerman, M. and Roelens, K. (2014). Sexual and reproductive health of migrants: Does the EU care? *Health Policy*, [online] 114(2-3), pp.215–225. doi:10.1016/j.healthpol.2013.10.007.

Larrañaga, I., Martín, U. and Bacigalupe, A. (2014). Salud sexual y reproductiva, y crisis económica en España. Informe SESPAS 2014. *Gaceta Sanitaria*, 28(Suppl 1), pp.109–115. doi:10.1016/j.gaceta.2014.03.007.

Legido-Quigley, H., Otero, L., Parra, D. la, Alvarez-Dardet, C., Martin-Moreno, J.M. and McKee, M. (2013). Will austerity cuts dismantle the Spanish healthcare system? *BMJ*, [online] 346. doi:10.1136/bmj.f2363.

Ley Orgánica 4/2000, de 11 de enero, sobre derechos y libertades de los extranjeros en España y su integración social. [online] Available at: https://www.boe.es/buscar/doc.php?id=BOE-A-2000-544.

Ley Orgánica 2/2010, de 3 de marzo, de salud sexual y reproductiva y de la interrupción voluntaria del embarazo. [online] Available at: https://www.boe.es/buscar/act.php?id=BOE-A-2010-3514.

Morero Beltrán, A. and Ballesteros Pena, A. (2015). Las consecuencias de la aplicación del Real Decreto-Ley de Regulación Sanitaria RD 16/2012 sobre la salud de las mujeres inmigradas. *Investigaciones Feministas*, 5(0). doi:10.5209/rev_infe.2014.v5.47768.

Pellico-López, A., Paz-Zulueta, M., Manjón-Rodríguez, J.B., Sánchez Movellán, M., Ajo Bolado, P., García-Vázquez, J., Cayón-De Las Cuevas, J. and Ruiz-Azcona, L. (2022). Evolution of Legislation and the Incidence of Elective Abortion in Spain: A Retrospective Observational Study (2011-2020). *International Journal of Environmental Research and Public Health*, [online] 19(15), p.9674. doi:10.3390/ijerph19159674.

Pérez-Molina, J.A. and Pulido, F. (2015). ¿Cómo está afectando la aplicación del nuevo marco legal sanitario a la asistencia de los inmigrantes infectados por el VIH en situación irregular en España? *Enfermedades Infecciosas y Microbiología Clínica*, 33(7), pp.437–445. doi:10.1016/j.eimc.2014.10.017.

Regidor, E., Barrio, G., Bravo, M.J. and de la Fuente, L. (2013). Has health in Spain been declining since the economic crisis?: Table 1. *Journal of Epidemiology and Community Health*, [online] 68(3), pp.280–282. doi:10.1136/jech-2013-202944.

Vázquez, M.L., Vargas, I. and Aller, M.-B. (2014). Reflexiones sobre el impacto de la crisis en la salud y la atención sanitaria de la población inmigrante. Informe SESPAS 2014. *Gaceta Sanitaria*, 28, pp.142–146. doi:10.1016/j.gaceta.2014.02.012.

Vidal-Coso, E. and Miret-Gamundi, P. (2014). The labour trajectories of immigrant women in Spain: Are there signs of upward social mobility? *Demographic Research*, 31(Article 13), pp.337–380. doi:10.4054/demres.2014.31.13.

CHAPTER 1

Understanding migrants' right to health during an economic crisis: Lessons from Spain's legislative response to the 2008 economic crisis

Abstract

This article explores the scope of States' international human rights obligations regarding migrants' right to health during an economic crisis. Using Spain's response to the economic crisis of 2008, and specifically its introduction of Royal Decree Law (RDL) 16/2012, which disentitled a number of undocumented migrants to universal right to health, it is examined whether under international law an economic crisis provides sufficient grounds to disentitle migrants from previously guaranteed universal access to health care. It is concluded that, while progressive realization of the right to health is not absolute, and may be circumscribed during an economic crisis, to justify any disentitlement, a heavy onus is placed on States to demonstrate that all efforts have been made to use all resources at its disposal. Any adjustments that may affect the enjoyment of health rights, must satisfy four requirements: (i) the policy or adjustment must be temporary; (ii) the policy must be necessary and proportionate; (iii) the policy must not be discriminatory; and (iv) the policy must identify the minimum core content of the rights and always ensure protection of these minimum core rights. It is suggested that Spain failed to discharge its burden and therefore the RDL 16/2012 was a breach of its international obligations regarding the right to health – that is, it was a regressive measure that was not temporary, and it was unjustified and discriminatory. Accordingly, although in line with domestic jurisprudence, the Constitutional Court of Spain upheld the law on grounds that it was a guiding principle of economic and social policy and thereby justified, the ruling was based on a restrictive interpretation of what the right to entails. The Constitutional Court failed to account for Spain's obligations regarding the right to health under the international treaties that regulate this right, even though Spain's Constitution clearly requires that the interpretation of fundamental rights guaranteed by it, including the right to health, must accord with international treaties and agreement.

Keywords: migrants, right to health, progressive realization, economic crisis.

1.1 Introduction and Background

1.1.1 The right to health international human rights framework

The right to health is enshrined and/or recognized in numerous international instruments and consensus and interpretive documents.[1] The right was first explicated in the Constitution of the World Health Organization (WHO) which states that, "the highest standard of health is one of the fundamental rights of every human being without distinction of race, religion, political belief, economic or social condition…"[2] The Universal Declaration of Human Rights (UDHR), which came two years later and is purportedly the first instrument of a general nature on the right to health in international law, states at Article 25.1 that, "everyone has the right to a standard of living adequate for the health of himself and of his family, including, food, clothing, housing and medical care and necessary social services."[3] It is the International Covenant on Economic, Social and Cultural Rights ("ICESCR") however, which provides the most comprehensive provision on the right to health in international human rights law.[4] Article 12 (1) of ICESCR stipulates that "State

---

[1] Article 25 of the Universal Declaration on Human Rights. *Universal Declaration of Human Rights*. [online] United Nations General Assembly Resolution 217 A (111). New York, NY: United Nations; 1948.
The preamble of the World Health Organization constitution. *World Health Organization. Constitution. Geneva, Switzerland: World Health Organization; 1946*;
Article 12 of the International Covenant on Economic, Social and Cultural Rights. *International Covenant on Economic, Social and Cultural Rights*. New York, NY: United Nations;1966. UN document A/6316. Available at: https://www.refworld.org/docid/3ae6b36c0.html [accessed 11 April 2021];
Article 6 of the International Covenant on Civil and Political Rights. *International Covenant on Civil and Political Rights*. New York, NY: United Nations; 1966. UN document General Assembly resolution 2200A (XXI);
Article 24 of the Convention on the Rights of the Child. *Convention on the Rights of the Child*. New York, NY: United Nations; 1989. UN document A/44/736. Available at: http://www.unhchr.ch/html/menu3/b/k2crc.htm. [accessed 11 April 2021];
Article 5 of the International Convention on the Elimination of All Forms of Racial Discrimination. *International Convention on the Elimination of All Forms of Racial Discrimination*. New York, NY: United Nations; 1966. UN document A/6014. Available at: http://www.unhchr.ch/html/menu3/b/d_icerd.htm [accessed 11 April 2021];
Articles 11, 12,14 of the Convention on the Elimination of All Forms of Discrimination Against Women. *Convention on the Elimination of All Forms of Discrimination Against Women*. New York, NY: United Nations; 1979. UN document A/34/36;
Articles 25, 28, 43 and 45 of International Convention on the Protection of the Rights of All Migrant Workers and Members of their Families, *International Convention on the Protection of the Rights of All Migrant Workers and Members of their Families*. New York, NY: United Nations; 1990. UN document A/RES/45/158. Available at https://treaties.un.org/doc/Publication/MTDSG/Volume%20I/Chapter%20IV/IV-13.en.pdf [accessed 17 April 2022]; and
Article 25, Convention on the Rights of Persons with Disabilities. Convention on the Rights of Persons with Disabilities. New York, NY: United Nations; 2006 UN document A/RES/61/106; are among the international instruments guaranteeing and/or recognizing the right to health.
[2] World Health Organization. Constitution. Geneva, Switzerland: World Health Organization; 1946.
[3] Universal Declaration of Human Rights. United Nations General Assembly Resolution 217 A (III). New York, NY: United Nations; 1948.
[4] International Covenant on Economic, Social and Cultural Rights. New York, NY: United Nations; 1966. UN document A/6316. Available at: https://www.refworld.org/docid/3ae6b36c0.html [accessed 11 April 2021]

parties to the covenant recognize the right of everyone to the enjoyment of the highest attainable standard of physical and mental health. Meanwhile, Article 12.2, enumerates non-exhaustive examples of States parties' obligations under the right to health. In addition to the international framework, at the regional level, there are also explicit provisions regarding the right to health. The European Social Charter (the "Charter")[5] is most instructive in this regard. Article 11 of the Charter imposes an obligation on contracting parties, to take appropriate measures to remove as far as possible, the causes of ill-health.

1.1.2 Migrants and the right to health

A framework for considering migrants right to health from a human rights perspective also exist. The international human rights framework on the right to health has recognized that equality and non-discrimination are fundamental to the realization of the right to health, and that the right to health, necessitates that special attention be paid to vulnerable groups, including migrants. In this regard, the United Nations Committee on Economic, Social and Cultural Rights (CESCR)[6] General Comment No. 14 ("General Comment No. 14"), which operates to clarify the key elements of the right to health that is embodied in international law, and which also to some extent, highlights the nature and scope of States' obligations, provides that, the right to health is to be understood as containing both freedoms and entitlements. Entitlement involves, the right to a system of health protection which provides equality of opportunity for people to enjoy the highest attainable level of health.[7] General Comment No. 14 also emphasizes that States parties are required to respect the right of non-citizens to the realization of the right to health by refraining from denying or limiting equal access to preventive, curative and palliative health services and adequate standard of physical and mental health.[8]

In relation to non-discrimination, the WHO's preamble and ICESCR Article 2 (2), identify non-exhaustive grounds of non-discrimination, to include among other factors, national or social origin

---

[5] Council of Europe, European Social Charter, 18 October 1961, ETS 35. Available at www.refworld.org/docid/3ae6b378.html [accessed 11 April 2021].
[6] Committee on Economic, Social and Cultural Rights. *General Comment No. 14: The Right to the Highest Attainable Standard of Health (Art. 12)*. Geneva, Switzerland: United Nations; 2000. UN document E/C.12/2000/4. The CESCR is tasked with promoting, enforcing, implementing and also monitoring compliance with ICESCR.
[7] CESCR, General Comment No. 14 para. 8.
[8] *Ibid*. para. 34.

and birth status. Furthermore, General Comment No. 14 posits that, States are, by virtue of Article 2.2 and Article 3 of ICESCR, to ensure non-discrimination in access to health care, the underlying determinants of health, as well as the means and entitlements to their procurement.[9] Also pertinent to migrant's right to health framework, is the International Convention on the Protection of the Rights of All Migrant Workers and members of their Families[10], which explicitly identifies the right to health for migrants in regular and irregular status. Moreover, the Special Rapporteur on health, has also emphasized that ill asylum-seekers or undocumented persons are an extremely vulnerable population group and should not be denied their human right to health care.[11]

1.2 Challenges and framing the problem

Notwithstanding the existence of a human rights framework for considering migrants' right to health, migrants face specific difficulties. There is a lack of clarity on migrants' entitlements under the international human right to health framework, mainly due to the absence of a uniform interpretation of the right to health generally, as well as the ability of States to apply their legislative authority to events and persons within its territory. In fact, while a February 2003 Special Rapporteur report on the right to health acknowledged the right to health, it notably stated that "although there is a growing national and international jurisprudence on the right to health, the legal content of the right is not yet well established."[12]

This lack of clarity on the right to health is elevated relative to migrants and accordingly, has spawned discriminatory practices which may be exacerbated during an economic crisis. As such, Article 12.2 of ICESCR sets out measures to be taken by States parties "to realize progressively…to the maximum available resources…the full obligation of this right."[13] Yet, this language of progressive realization and maximal available resources, not only suggest different

---

[9] *Ibid*. para. 18.
[10] The 1990 International Convention on the Protection of the Rights of All Migrant Workers and Members of their Families Articles 28, 25, 43 (e) and 45 (c), which explicitly identifies the right to health for migrants in regular and irregular status is illustrative.
[11] UN Office of the High Commissioner for Human Rights (OHCHR), *Fact Sheet No. 31, The Right to Health*, June 2008, No. 31, available at: https://www.refworld.org/docid/48625a742.html [accessed 11 April 2021]
[12] UN Commission on Human Rights, the right of everyone to the enjoyment of the highest attainable standard of physical and mental health: Report of the Special Rapporteur, Paul Hunt, E/CN.4/2003/58 (February 13, 2003) at para. 39.
[13] CESCR General Comment No. 14 para. 2.

standards for different countries, but it offers a level of flexibility that does not accord with the certainty with which some other human rights operate. Inherent in this language of progressive realization and maximal available resources, is the right of States to nationally condition the right to health, based on its available resources. Indeed, such flexibility may operate to circumscribe migrants' right to health within a State, and lead to discrimination in the right to health. Such a position was highlighted in a United Nations High Commission of Human Rights report, which notes that, States have explicitly expressed before international human rights bodies or in national legislation, their inability and/or reluctance to provide the same level of protection to migrants as to their own citizens. Accordingly, it was noted in that report, that most countries have defined their health obligations towards non-citizens in terms of "essential care" or "emergency health care", which are concepts with broad interpretations, and which ultimately leads to discriminatory practices and laws.[14] Notably, the limits on migrants right to health and the resulting discrimination in the enjoyment of the right, may be exacerbated during times of an economic crisis. In fact, the CESCR in its 2012 open letter, recognized that economic and financial crises, impede progressive realization of economic, social and cultural rights and can lead to retrogression in the enjoyment of those rights. [15]

The broad issue thus becomes, how to define the scope of States' obligations regarding the right to health, where domestic realities may require national conditioning and/or adjustments of the right to health that do not accord with the international human right to health framework of progressive realization. The case of Spain is appropriate for exploring this issue. Despite being a party to several international conventions and consensus documents on the right to health, Spain took an unprecedented response to the 2008 economic crisis, introducing Royal Decree Law (RDL) 16/2012. RDL 16/2012 was aimed at containing public expenditure. The legislation essentially reversed previous universal access to health care, guaranteed under the predecessor law, Organic Law 2000, thereby marginalizing specific groups within Spain, mainly undocumented migrants. Effectively, healthcare entitlements under Organic Law 4/2000 were no

---

[14] UN Office of the High Commissioner for Human Rights (OHCHR), *Fact Sheet No. 31, The Right to Health*, June 2008, No. 31, available at: https://www.refworld.org/docid/48625a742.html [accessed 11 April 2021] pp. 18-20
[15] Chairperson of the CESCR, 'Letter Dated 16 May 2012 Addressed by the Chairperson of the Committee on Economic, Social and Cultural Rights to States Parties to the International Covenant on Economic, Social and Cultural Rights' (2012) UN Doc HRC/NONE/2012/76, UN reference CESCR/48th/SP/MAB/SW.

longer guaranteed, especially for migrants, as coverage was now more explicitly linked to social security entitlements. In this regard, except in "special situations", namely, emergency resulting from serious illness or accident; care for pregnant women, both prenatal and postnatal; foreign minors aged under 18 years - irregular migrants no longer had access to free health care. Meanwhile, it has been suggested that access to health was not guaranteed even for migrants included in the coverage of Law 16/2012 (Morena Beltran and Ballesteros Pena, 2015).

Using Spain's introduction of RDL 16/2012 and the international community's response, the scope of States' human rights obligations regarding migrants right to health during an economic crisis is explored.

1.3 Right to health under international law

1.3.1 Is there an obligation on Spain to provide a right of access to public health care for migrants?
The CESCR has stated that "the Covenant's rights apply to everyone including non-nationals…regardless of legal status and documentation."[16] There is the specific requirement that States avert any suspension of legislation or the adoption of laws or policies that that interfere with the enjoyment of any of the components of the right to health.[17] Beyond this, the CESCR has specified that State parties have an obligation to respect the right to health, "by refraining from denying or limiting equal access for all persons, including prisoners or detainees, minorities, asylum-seekers and illegal immigrants, to preventive, curative and palliative health services; abstaining from imposing discriminatory practices as a State policy; and abstaining from imposing discriminatory practices relating to women's health status and needs."[18]

States' obligations under the right to health contain key considerations. Indeed, there are a set of obligations which States have, which are of immediate effect.[19] ICESCR imposes on States, the immediate obligation to ensure that the right to health is exercised without discrimination of any kind.[20] Accordingly, there is an immediate duty on States requiring non-discriminatory access to health facilities, goods and services, especially for vulnerable or marginalized groups. This

---

[16] CESCR General Comment No. 20 of 2009, para.
[17] *Ibid.* para. 50
[18] CESCR General Comment 14, para. 34.
[19] *Ibid*. para. 30.
[20] ICESCR Article 2.2.

obligation is a minimum core obligation under the right to health and thus any retrogressive measure incompatible with it, is prima facie a violation of the right to health.[21] The CESCR provides that, States government must ensure that "health facilities, goods and services are accessible to all, especially the most vulnerable or marginalized sections of the population, in law and in fact, without discrimination on any of the prohibited grounds", including national or social origin.[22]

Secondly, States parties have an immediate obligation under Article 2.1 of ICESCR, to take steps towards the full realization of the right to health."[23] The CESCR has noted that, "the principal obligation …in article 2(1) is to take steps with a view to achieving progressively the full realization of the rights recognized in the Covenant…recognition of the fact that full realization of all economic, social and cultural right will generally not be able to be achieved in a short period of time…"[24] The CESCR has affirmed however, that notwithstanding that the right to health is subject to progressive realization, governments have an obligation to move expeditiously and effectively, to take deliberate, concrete and targeted steps towards full realization of the right to the highest attainable standard of health.[25]

Finally, in line with the international obligations, the European Committee of Social Rights ("European Committee") in explicating the right to health, has noted that States parties to the Charter "have guaranteed to foreigners not covered by the Charter, rights identical to or inseparable from those of the Charter, by ratifying human rights treaties – in particular the European Convention on Human Rights – or by adopting domestic rules whether constitutional, legislative or otherwise without distinguishing between persons referred to explicitly in the Appendix and other non-nationals. In so doing, the Parties have undertaken these obligations."[26]

---

[21] CESCR General Comment 14 paras 43 and 48.
[22] CESCR General Comment 14 paras. 18 and 43.
[23] ICESCR Article 2.1 and CESCR General Comment 14 para. 30.
[24] General Comment 3 para. 9.
[25] CESCR General Comment No. 4 para. 30.
[26] Conclusions 2004, Statement of interpretation of Article 11, p. 10.

The European Committee has further held that the parties to the Charter have positive obligations in respect of access to health care for migrants, "whatever their residence status." [27] It has noted that paragraph 1 of Article 11 of the Charter which requires States parties to take appropriate measures to remove the causes of ill-health, is interpreted by the European Committee, such that, "States must ensure that all individuals have the right of access to health care and that the health system must be accessible to the entire population", insofar as "health care is a prerequisite for the preservation of human dignity and that human dignity is the fundamental value and indeed the core of positive European human rights law – whether under the European Social Charter or the European Convention on Human Rights."[28] The European Committee of Social Rights has also put forward six minimum obligations of States in respect of Article 11 on the right to health, the most notable in this context being the provision of special measures to safeguard health and healthcare access for vulnerable groups.[29]

Pulling all this together, it is evident that the international human rights framework on the right to health places a positive obligation on States to provide equal and non-discriminatory access to health care. General Comment No. 14 outlines various elements which constitute the failure by a State to fulfil its duty of the right to health, including: "the denial of access to health facilities, goods and services to particular individuals or groups as a result of de jure or de facto discrimination; the suspension of legislation or the adoption of laws or policies that that interfere with the enjoyment of any of the components of the right to health; the failure of the State to take into account its legal obligations regarding the right to health;[30] and insufficient expenditure or misallocation of public resources which results in the non-enjoyment of the right to health by individuals or groups, particularly the vulnerable or marginalized."[31] It has also made it clear that the adoption of any retrogressive measures which are incompatible with the core obligations [non-discrimination in access to health care] under the right to health, constitutes a violation of the right

---

[27] (Médecins du Monde – International v. France, Complaint No. 67/2011, decision on the merits of 11 September 2012, §144).
[28] (International Federation of Human Rights Leagues v. France, Complaint No. 14/2003, decision on the merits of 8 September 2004, § 31; Defence for Children International (DCI) v. Belgium, Complaint No. 69/2011, decision on the merits of 23 October 2012, §§ 100-101).
[29] Council of Europe, Case Law on the European Social Charter (Strasbourg: Council of Europe, 1982) Conclusions I, paragraph 59.
[30] CESCR General Comment 14 para. 50.
[31] *Ibid*. para 52.

to health.[32] Furthermore, the rule against regression highlights certain criteria which must be satisfied in order for a State to successfully justify any regressive measures.

1.4 Right to health under domestic law

1.4.1. Is there an obligation on Spain to provide a right of access to public health care for migrants?

At the national level, Spain maintains Constitutional supremacy, and not only guarantees the right to health under Article 43 of its Constitution, but under Article 96(1), the Constitution establishes that internationally ratified laws form part of the domestic laws of Spain and are legally binding.[33] Furthermore, Article 10.2 establishes that international treaties and agreements are a constitutional source of interpretation of domestic laws, stating that, "provisions relating to the fundamental rights and liberties recognized by the Constitution shall be construed in conformity with the Universal Declaration of Human Rights and international treaties and agreements thereon ratified by Spain." Spain has ratified the ICESCR as well as the European Social Charter and the European Union Fundamental Rights Charter, all of which guarantee the right to health. Accordingly, the right to health under Spain's Constitution requires interpretations that are in line with international treaties and agreements.

It is important to note that the Constitutional Court has provided jurisprudence which suggests that constitutional rights are not absolute. In this sense, whilst there is no provision in the Spanish Constitution regarding imposition of rights restrictions, the Constitutional Court has affirmed that constitutional rights may be restricted in order to protect other rights or general interests once the requisite test is satisfied – that is, restriction must be provided by law and must be justified under the proportionality principle. Three elements must be satisfied under the principle of proportionality, namely: (i) is the restriction necessary to achieve a legitimate goal; (ii) is the restriction necessary such that the measure chosen is the least restrictive in satisfying the goal; and (iii) do the benefits to be achieved by the restriction outweigh the costs of the restriction.[34]

---

[32] *Ibid.* para 48.
[33] *Constitución Española* [Spain], 27 December 1978, available at: https://www.refworld.org/docid/3dbd6e7d7.html [accessed 21 March 2021].
[34] (Comella, 2013)

1.5 Applying the right to health

1.5.1. Under domestic law, can the right to health care afforded to migrants be circumscribed during an economic crisis?

The Constitutional Court of Spain upheld in August 2016, RDL 16/2012 (16).[35] In addition, in its STC 134/2017 Judgment, the court nullified Basque's legislation which guaranteed undocumented migrants' access to health care, who were otherwise excluded due to RDL 16/2012.[36] The effect of these judgments was to affirm the RDL 16/2012, thereby confirming the exclusion of undocumented migrants from the universal access to health care. This was the case notwithstanding Spain's ratification of relevant international consensus documents and Spain's Constitution which obligates Spain to interpret laws in line with international treaties and agreements.

In upholding the legislation, the Constitutional Court reasoned that, albeit RDL 16/2012 limited access to free health care for undocumented migrants, such limits were proportional to pursuing a legislative objective of preserving and maintaining the public health system, due to the "situation of urgent and extreme necessity" and of "grave economic difficulty without precedents since the creation of the National Health System."[37] The Constitutional Court also reasoned that the health reform did not constitute a violation of the right to health but rather was a mere "guiding principle of economic and social policy."[38]

Accordingly, the Constitutional Court affirmed that a law that limits a constitutional right or freedom is reasonable, where it enforces an important government legislative objective and is demonstrably justifiable. The Court's findings comport with Spain's existing jurisprudence which

---

[35] Center for Economic and Social Rights (CESCR), *Spain: Constitutional Court ruling on health service exclusion of undocumented migrants ignores human rights*, 4 August 2016, "[Press Release]" available at: https://www.cesr.org/spain-constitutional-court-ruling-health-service-exclusion-undocumented-migrants-ignores-human [accessed 11 April 2021]

[36] Center for Economic and Social Rights (CESCR), *Spanish Court restricts autonomous communities' power to expand universal healthcare*, 15 December 2017, "[Press Release]" available at: https:// www.cesr.org/spanish-constitutional-court-restricts-autonomous-communities-regulatory-power-expand-universal [accessed 11 April 2021]

[37] Center for Economic and Social Rights (CESCR), Spain: Constitutional Court ruling on health service exclusion of undocumented migrants ignores human rights, 4 August 2016, "[Press Release]" available at: https://www.cesr.org/spain-constitutional-court-ruling-health-service-exclusion-undocumented-migrants-ignores-human [accessed 11 April 2021]

[38] *Ibid.*

allows for limits or restrictions on rights, once the requisite test is satisfied. In this regard, the Constitutional Court of Spain deemed the economic crisis as establishing the appropriate circumstances which served to justify that RDL 16/2012 was implemented to pursue a legitimate objective of preserving and maintaining the public health system. It does not appear however that the Constitutional Court adequately considered international treaties and agreements in arriving at its decision or alternatively, the Court's ruling could be viewed as imbalanced, in favor of economic freedoms.

1.5.2. Under international law, can the right to health care afforded to migrants be circumscribed during an economic crisis?

The logical corollary that flows from the duty of progressive realization is that generally, States must not regress on the realization of the right to health, even in times of severe economic restraints or crisis. Accordingly, the UN Human Rights Council affirmed at its Special Session in 2009 that "the global economic and financial crises do not diminish the responsibility of national authorities and the international community in the realization of human rights."[39] More specific to migrants' needs, the CESCR provides that "even in times of severe resource constraints whether caused by a process of adjustment, of economic recession, or by other factors, the vulnerable members of society can and indeed must be protected by the adoption of relatively low-cost targeted programmes…"[40] and that there must be deliberate and well-targeted low-cost measures taken by states to prioritize and ensure that the most vulnerable can enjoy at least the minimum levels of rights of enjoyment.[41] Furthermore, the CESCR has made clear in a press release that the Committee's concluding observations of May 2012, served as a reminder to States that "it is precisely in times of economic crisis when efforts must be redoubled to guarantee human rights for everyone, without discrimination, and in particular for the most vulnerable."[42] In addition, in

---

[39] Human Rights Council Resolution S-10/1 "The impact of the global economic and financial crises on the universal realization and effective enjoyment of human rights", para. 5. Available at A/HRC/S-10/L.1 - E - A/HRC/S-10/L.1 -Desktop (undocs.org). [Accessed 11 April 2021]

[40] General Comment 3 para. 12; para. 18.

[41] *Ibid*. para. 28; CESCR General Comment No. 14, para. 18.

[42] Center for Economic and Social Rights (CESCR), *UN Committee calls on Spain to revise austerity measures*, 24 May 2012, "[Press Release]" available at: https://www.cesr.org/un-committee-calls-spain-revise-austerity-measures [accessed 11 April 2021]

its open letter, the CESCR acknowledges that adjustments may be inevitable at times but "States parties, however, should not act in breach of their obligations under the Covenant."[43]

Similarly, in 2009, the European Committee stated that "the economic crisis should not have as a consequence, the reduction of the protection of the rights recognized by the Charter and that governments are bound to take all necessary steps to ensure that the rights of the Charter are effectively guaranteed at a period of time when beneficiaries need the protection most."[44] Applying this principle, the European Committee concluded that denial of access to health care for adult foreigners present in the country irregularly, was contrary to Article 11 of the Charter.

Evidently, the concept of progressive realization is not absolute. However, this presumption is only rebuttable if a State party is able to demonstrate that all efforts have been made to use all resources at its disposal.[45] The CESR indicates that, any deliberately retrogressive measures would require the most careful consideration and would need to be fully justified by reference to the totality of the rights provided for in the Covenant and in the context of the full use of the maximum available resources."[46] Additionally, the Siracusa Principles provide that even in circumstances of a conflict between human rights and public health needs, governments may infringe rights only if their actions are necessary to achieve legitimate objectives, provided those actions are the least intrusive possible, and non-discriminatory in application.[47]

Furthermore, the CESCR has provided some guidance on what would be reasonable to justify circumventing the rule against non-retrogression in circumstances where there is a scarcity of resources. It states that, any regressive measure must be temporary, covering only the period of the crisis; must be necessary and proportionate such that adoption of any other policy, or a failure to act, would be more detrimental to the right; cannot be discriminatory and must comprise all possible measures to mitigate inequalities that can grow in times of crisis and to ensure that the

---

[43] CESCR, "Letter on behalf of the Committee of Economic, Social and Cultural Rights to all States Parties to the ICESCR on the protection of rights in the context of the economic and financial crisis", 16 May 2012.
[44] ECSR, Conclusions 2009, Vol. I, paragraph 17.
[45] CESCR General Comment No. 3 para. 10.
[46] *Ibid*.
[47] United Nations, Economic and Social Council, Siracusa Principles on the Limitation and Derogation Provisions in the International Covenant on Civil and Political Rights.

rights of disadvantaged and marginalized individuals and groups are not disproportionately affected; must take into account all possible alternatives; and must identify and protect the minimum core content of the right.[48]

Applying the above stated obligations to the context of Spain, the RDL 16/2012 has been unequivocally described by the CESCR and other international bodies as regressive and a breach of Spain's human rights norms and obligations under the right to health. The international law has been interpreted to conclude that even if Spain could argue that the austerity measures were necessary to respond to the economic crisis, the government nonetheless failed to reasonably demonstrate that the measures taken were sufficient to discharge the burdens placed upon it to justify its failure to comply with the minimum core obligations of non-discrimination and the rule against regressive measures. Several factors have been included in the considerations leading to such conclusions.

The European Committee has confirmed that, without more, the economic crisis did not provide sufficient grounds for implementing the regressive law. There appears to be a duty of states to consult. Applying the case of IKAETAM v. Greece[49], the European Committee has held that, even taking into account the particular context created by the economic crisis, the relevant Governments are required to conduct the minimum level of research and analysis, and discussions and consultations with stakeholder organizations, regarding the effects of the measures in question. In such discussions, there needs to be a proper assessment of the full impact of the measure on the most vulnerable. The European Committee went on to note that, based upon the complexity of the measures required to reorganize the health system, the economic crisis cannot serve as a pretext for a restriction or denial of access to health care that affects the very substance of the said right.

In addition, the CESCR has stressed the need to consider all financing alternatives to prevent deteriorations in economic and social rights, stating that, any proposed austerity measures may

---

[48] CESCR, "Letter on behalf of the Committee of Economic, Social and Cultural Rights to all States Parties to the ICESCR on the protection of rights in the context of the economic and financial crisis", 16 May 2012.
[49] IKAETAM v. Greece, Complaint No. 76/2012, decision on the merits of 7 December 2012, § 79.

only be introduced after exhausting all possible alternatives.[50]   However, some international organizations have indicated a failure on the part of Spain to conduct a prudent and detailed analysis to support the viewpoint that the RDL 16/2012 was the least restrictive option to address the "grave economic difficulty"[51] facing the country, which formed the basis for the law.

1.5.3 Reconciling Spain's Domestic and International Law obligations

Indeed, RDL 16/2012 introduced budgetary cuts to the healthcare system, resulting in the non-enjoyment of the right to health by undocumented migrants. The law was discriminatory, in law, in fact and in its effect, as it disproportionately disentitled migrants to universal health care access. Moreover, albeit the law was implemented against the backdrop of the economic downturn, the law failed to satisfy the requirements necessary to justify regressive measures during such an economic crisis. In addition to being discriminatory, the law was not designed to be temporary in nature and there was a failure on the part of the legislature to prove that non-implementation of the law or adoption of other policies to combat the effect of the economic crisis were more detrimental to the right to health of migrants.

In fact, the Constitutional Court ruled that the Basque's countermeasures aimed at nullifying the effect of the non-enjoyment of universal health care for undocumented migrants was also unconstitutional. This suggests that other measures could have been implemented which would have been less severe to migrants right to health. As such, in a press release, signatory organizations via the CESCR, made it explicitly clear that "by preventing the AACC from going beyond the minimum established by RDL 16/2012, Spain is violating its obligation to adopt measures up to the maximum of its available resources, thus progressively realizing the right to health."[52] Importantly, the CESCR has noted that notwithstanding "the formidable structural and

---

[50] CESCR, "Letter on behalf of the Committee of Economic, Social and Cultural Rights to all States Parties to the ICESCR on the protection of rights in the context of the economic and financial crisis", 16 May 2012; Report of the United Nations High Commissioner for Human Rights on the impact of austerity measures on economic, social and cultural rights, 2013, E/2013/51.

[51] Center for Economic and Social Rights (CESCR), *Spain: Constitutional Court ruling on health service exclusion of undocumented migrants ignores human rights*, 4 August 2016, "[Press Release]" available at: https://www.cesr.org/spain-constitutional-court-ruling-health-service-exclusion-undocumented-migrants-ignores-human [accessed 11 April 2021].

[52] Center for Economic and Social Rights (CESCR), Spanish Court Spanish Court restricts autonomous communities' power to expand universal healthcare, 15 December 2017, "[Press Release]" available at:

other obstacles resulting from international and other factors beyond the control of States that impedes the full realization of Article 12 [ICESCR] in many States", "it is important to distinguish the inability from the unwillingness of a State party to comply with its obligations." In this regard, the Committee notes that "a State which is unwilling to use the maximum of its available resources for the realization of the right to health is in violation of its obligations.[53] Looking at the totality of circumstances therefore, the better view is that Spain breached its legal obligation regarding the right to health embodied in international law.

Yet, the Constitutional Court of Spain reached the opposite conclusion, upholding RDL 16/2012 and finding that the law was justified as it pursued a legitimate government objective. On the other hand, the CESCR and other signatory organizations, have indicated that the Constitutional Court erred in its ruling that RDL was 16/2012 was justified. In this regard, it is posited that the Constitutional Court failed to adequately consider international human rights treaties and recommendations issued by regional and international human rights mechanisms and ignored the fact that Spain failed to oblige by the requirements set out therein, when any austerity measures are undertaken.

While the position of international law vis-à-vis the Spanish Constitution and whether one is paramount to the other, is beyond the scope of this article, it is suggested that, based on Article 10 (2) of the Constitution, which posits that fundamental rights and freedoms recognized by the Constitution shall be interpreted in conformity with the UDHR and other international treaties and agreements protecting human rights, international law constitute a constitutional canon of interpretation for domestic courts. Accordingly, it is posited that, as a plain reading of Spain's Constitution suggests that Spain has an obligation to recognize the right to health of migrants, both under international and domestic law, given that the Spanish Constitution itself requires that the rights contained therein are to be interpreted in light of international treaties, then any law circumscribing health access of migrants in a manner that breaches its international obligations, would resultantly breach its domestic law.

---

https://www.cesr.org/spanish-constitutional-court-restricts-autonomous-communities-regulatory-power-expand-universal [accessed 11 April 2021].
[53] *Ibid.* para 47.

1.6 Conclusion

Economic and financial crises can indeed impact progressive realization of the right to health. In acknowledgement of this, the language of international treaty provisions, allow for a margin of appreciation within which States can set their national policies. An economic crisis however, does not eliminate States' human rights obligations and as such, States parties cannot avert their obligations under international treaties irrespective of the circumstances. Accordingly, within this margin of appreciation, a heavy burden is placed on States intending to implement regressive measures and/or adjustments, to prove that any proposed austerity measures are in line with their standing human rights obligations. In limiting access of free health care to undocumented migrants, Spain had a duty to ensure that the requirements set out under international human rights law was followed – including, the measure being temporary, non-discriminatory and proportionate and necessary, such that, if the action was not taken, the situation would be much worse and more human rights violation would have occurred. This burden was not discharged by Spain, leading to the conclusion that the RDL 16/2012 was a breach of its international human right obligation regarding the right to health. Accordingly, Spain's Constitution Court upholding the law, has been categorically rejected under international law, with the conclusion that the ruling clearly upheld a regressive and discriminatory law that was unjustified even in the circumstances of the severe economic crisis which affected Spain. Noteworthy, after much effort by the CESCR and other international actors, RDL 16/2012 was repealed in June 2018, reinstating health care entitlements for every person residing in the Spanish state.

CHAPTER 2

The Impact of Legislation on Female Migrants Health Outcomes: Evidence from Spain's Legislative Response (RDL 16/2012) to the 2008 Economic Crisis

Abstract

Against the backdrop of Spain's implementation of Royal Decree 16/2012 (the "**law**"), this article analyzes four health outcomes to determine the impact, if any, of the law on the migrant and native populations in Spain. The variables under investigation are self-rated heath, mental health, and cervical and mammogram screening. Using pooled cross-sectional data from the National Health Survey of Spain, 2011/12 (pre the law's implementation), and 2017 (post the law's implementation), a pre-law-post-law comparison, based on descriptive statistics and logistic regression estimates is employed. Our findings show that the effects of the law vary, based on the outcome studied and according to nationality, but it was women from Northern Africa and the rest of the Global South who were most negatively impacted. Relative to all other group of women, these women had poorer socio-demographic outcomes in both periods, in addition to poorer health outcomes in the post-law period, except for mental health. Statistically significant poorer health outcomes in the post-law period were observed among women from Spain (self-rated health), women from the Global North (self-rated health and mental health), and women from Northern Africa and the rest of the Global South (mammogram screening). On the contrary, improvements in health outcomes in the post-law period were observed among Spanish women (mental health), women from Eastern Europe (self-rated health), women from Latin America (self-rated health, mental health, mammogram and cervical screening), and women from Northern Africa and the rest of the Global South (mental health). We also found that, consistent with the immigrant paradox, shorter-term migrants were generally more likely to self- report good health (Eastern Europe and Northern Africa and the rest of the Global South), and to report better mental health (Eastern Europe and Latin America). On the contrary, longer-term migrants had better mammogram screening outcomes in the post-law period (Global North) suggesting duration of residence effects. Our findings suggest the need to continue to monitor the implications of health policies on health outcomes and implicates the improvement of socio-economic conditions for those most vulnerable.

Keywords: Migrants; RDL 16/2012; reproductive health; general health; mental health; Spain

2.1 Introduction and Background

The right to health, characterized as the enjoyment of the highest attainable standard of health without distinction of race, nationality, religion, political belief, economic or social condition etc. (World Health Organization ("WHO") Constitution, International Covenant on Economic, Social and Cultural Rights ("United Nations, 1966"), is well established in international and human rights law. Importantly, sexual and reproductive rights have also been recognized as a health and human right, and therefore these rights form part of the right to health agenda, although developments in the sexual and reproductive health rights agenda have not kept pace with the momentum in the general health agenda. As one author has described the situation within the European Union, while there is a proclaimed rights-based approach to health, the strategies geared at addressing health among migrants often fail to address sexual and reproductive health rights (Keygnaerta et al., 2014). The need to address such rights in the right to health discourse therefore, and particularly as it relates to migrants, is clear. In fact, global initiatives such as Family Planning 2020, International Conference on Population and Development (ICPD) Beyond 2014, and the United Nation's Sustainable Development Goals, have all critically highlighted the importance of, and the need for commitment to, and focus on, sexual and reproductive health rights, in addition to general health rights.

It is trite international law that the right to health, including sexual and reproductive health rights must be promoted, protected, and fulfilled and accordingly, the international human rights framework on the right to health recognizes and advocates for laws and policies to help realize the right. The Committee on Economic, Social and Cultural Rights ("CESCR"), General Comment 14 for example states that, the realization of the right to health may be pursued through "... the formulation of health policies, or the implementation of health programmes developed by WHO, or the adoption of specific legal instruments" (Committee on Economic, Social and Cultural Rights, 2000).

Importantly, there is recognition that laws and policies can also serve to impede the realization of the right to health. It is no question therefore why the WHO's Health in All Policies (HiAP) approach, advocates for consideration of the implications of health policies on health outcomes, disparities, and determinants of health. The WHO's HiAP serves as a guideline on the approach

public sectors are required to follow in developing the right to health agenda, including the promotion of health equity across different population groups, and which suggests that right to health policy frameworks, must include a collaborative and integrative approach across multiple sectors. Undoubtedly, to effect sound policy-based decision-making which comports with the right to health agenda contemplated by international law, there is a requirement for sound empirical evidence of how laws and policies impact health outcomes and disparities. Against the backdrop of relatively high immigration, a feminization of the migration process, and a significant proportion of migrant women in the reproductive ages, the context of Spain is ripe for the type of impact analysis contemplated by the HiAP approach. More specifically, how restrictive laws may impact health outcomes and disparities. In that, legal developments in Spain's health agenda, coupled with unfavorable social characteristics of mostly non-European Union (non-EU) migrants, particularly those from Northern Africa and the Global South, who are generally more vulnerable and marginalized, is likely to lead to poorer health outcomes, including poorer sexual and reproductive health outcomes, and may also exacerbate health inequalities.

The increasing inflows of migrants into Spain, with the population without Spanish citizenship representing approximately 11 per cent of the entire population in 2019 (INE, 2021), has been linked with a developing health agenda responsive to international and regional human rights law, including a generally progressive sexual and reproductive rights health agenda. In adopting a rights-based approach to health, a significant part of the health agenda of Spain has been the introduction of legislations and policies aimed at curbing health inequalities and addressing migrants' health, within the overall health framework. Organic Law 2/2010 is the most critical to the reproductive health agenda "because of its vocation of adapting the Spanish regulatory framework to the consensus of the international community, guaranteeing fundamental rights in sexual and reproductive health, regulating the voluntary interruption of pregnancy (taking it out of the Criminal Code framework) and requiring an institutional strategy of attention to sexual and reproductive health" (Larrañaga, Martin and Bacigalupe, 2014). More generally however, until April 2012, one of the most important legal references regarding the right to health in Spain was

the implementation of Organic Law 4/2000[54], which focused on the rights and liberties of foreigners[55] in Spain as well as their social integration. This law posited that irrespective of one's nationality, country of birth or legal status, all individuals had the right to use health services provided under the National Health Care System (NHS) in the same way as Spanish nationals, provided that, they were registered (documented) migrants.

Notwithstanding the above-noted and other positive developments in the right to health agenda in Spain, there have been limitations in its advancement, the most notable of which was Spain's legislative response to the economic crisis of 2008. In the year 2012, the Spanish Government issued Royal Decree16/2012 ("RDL 16/2012" or the "law"), which essentially altered healthcare entitlements under Organic Law 4/2000. As a result of the law change, coverage was now more explicitly linked to social security entitlements – whereby only the insured and beneficiaries of the insured were entitled to public health care coverage and those outside these categories could only access health care by paying for the cost of service or through additional insurance. Several non-residents, specifically undocumented migrants, lost their right to primary healthcare, except for, emergency services, some aspects of maternal health, and children under 18 years of age. One major expected impact of the application of RDL 16/2012 is poorer health outcomes, especially among non-natives and a widening of the health inequalities and inequities between migrants and Spanish nationals, which runs contrary to the right to health agenda.

2.2 Review of the Literature

A review of the literature highlights negative implications that may result because of restrictive policies such as RDL 16/2012. One author referencing the case of Europe has posited that "restrictive policies … are linked to a greater risk of poor general and mental health … among migrants, relative to native populations and migrants that did not experience such restrictions" (Juarez et al., 2019). Previous studies have also shown that social, economic, political and legal restrictions not only affect the deterioration of health, but simultaneously increases social

---

[54] Royal Decree 2393/2004was passed in December 2004, approving the Regulations of Organic Law 4/2000. Organic Law 4/2000 was reformed to Organic Law 8/2000 of 22 December, Reforming Organic Law 4/2000, of 11 January, regarding the Rights and Freedoms of Foreign Nationals Living in Spain and their Social Integration
[55] As defined by the Law, "foreigners for the purposes of the application of this Law, are considered to be foreigners who do not have Spanish nationality."

inequalities in health due to barriers that hinder access, use, and navigation of health services (Legido-Quigley et al. 2013; Vázquez Vargas and Aller, 2014; Garcia-Subirats et al.,2014; Peralta-Gallego, Gene-Badia and Gallo, 2018; Regidor et al. 2013). Disparities in health outcomes and health service utilization between migrants and the native population have been found to have persisted in Spain, even within the framework of more liberal and favourable laws, and less legal barriers to health, provided under Organic Law 4/2000 (Hernandez-Quevedo and Jimenez-Rubio, 2009; Carmona et al.,2014; Keygnaerta et al., 2014; Villarroeal and Artazcoz, 2012; Gotsens et al. 2015; Carrasco-Garrido et al., 2009). It has been found that that migrants as compared to the natives appear to be more likely to experience mental health problems and worse self-rated health (Malmusi and Ortiz-Barreda, 2014; Nielsen and Krasnik, 2010; Agudelo-Suarez et al. 2013; Salinero-Fort et al., 2012; Collazos Sanchez et al. 2014).

In respect of sexual and reproductive health, notwithstanding a dearth of studies (Larrañaga, Martin and Bacigalupe, 2014; Garcia-Subitrats et al., 2014), the health inequality between natives and migrants is well documented in the literature (Fernandez, Cavanillas and de Mateo, 2010; Rio et al., 2010; INE, 2012; Gispert et al. 2008; Rodríguez Álvarez et al. 2014; Hernando Rovirola et al. 2014, Keygnaerta et al., 2014). These include lower participation in screening for breast and cervical cancer among migrant women in Spain (Rodríguez Álvarez et al. 2014; Keygnaerta et al., 2014); migrant women in Spain having more losses to follow-up treatment relative to HIV/AIDS and worse immunological response to treatment (Hernando Rovirola et al. 2014). Accordingly, the greater restrictions vis-à-vis RDL 16/2012 are expected to lead to poorer health outcomes and may also serve to exacerbate such health disparities between migrants and Spanish nationals.

Importantly, the generally poorer health outcomes expected to be observed among migrants due to the more restrictive health law, is expected to occur within the context of declining health trajectories, especially among longer-term migrants. Research on migrants' health has found a health advantage among migrants, which diminishes with increasing duration of residence (Otero-Garcia et al. 2013; Alvarez-Nieto 2015). In that, several reports in what is referred to as the "immigrant paradox", have demonstrated that migrants generally experience similar or better health outcomes compared to the native population despite socio-economic disadvantage and barriers to health care use, but that with increased length of residence, they experience a decline

in their health. Studies conducted among migrants in Spain have largely supported the immigrant paradox theory and duration effects but have also highlighted empirical variations based on outcomes as well as migrant groups (Garcia Subirats et al. 2014; Malmusi & Barreda 2014; Hernando Rovirola et al. 2014). Accordingly, the effects of the law, if any, may be more severe among long-term migrants as compared with short-term migrants.

Although RDL 16/2012 which was specifically designed to influence health access, is expected to adversely impact health outcomes of migrants, and potentially exacerbate inequalities and disparities between migrants and the native population, previous research on its impact on health outcomes and disparities has been limited. There are a few policy studies on healthcare inequalities in Spain relative to migrants (Vazquez et al. 2013; Cimas et al. 2016; Larrañaga, Martin and Bacigalupe, 2014; Garcia-Subitrats et al., 2014) and even fewer studies focussing on sexual and reproductive health outcomes (Keygnaerta et al., 2014) let alone, outcome disparities based on the law change. Using logistic regression estimates, we explore, vis-à-vis pre-law-post-law comparisons, the impact of the law change on four outcome indicators, namely, general perceived health, mental health, pap smear screening and mammogram screening. We aim in our investigation to add to the research literature regarding the impact of restrictive laws on health outcomes.

2.3 Methodology

2.3.1 Data

Pooled cross-sectional data was used to carry out our analysis. The data was drawn from two rounds of the National Health Survey of Spain for survey years 2011/12 (representing the pre-law phase) and 2017 (representing the post-law phase). In both survey years, data was collected on several indicators of health, including the variables used in our analysis - general perceived health, mental health, and cervical smear and mammogram screening. Self-rated perceived health is the most extensively used measure of health in the research literature, and it has been shown to be a strong predictor of subsequent use of health care services (Van Doorslaer et al., 2000). Mammogram screening and cervical screening are important indicators of women's preventative measures. Finally, it has been shown that mental health care consumption differs between native

and migrant populations as a result of predisposition, enabling and need factors (Kamperman, Komproe and de Jong, 2007; Andersen 1995; Andersen and Newman, 1973).

Perceived health was measured using the question "perceived health in the last 12 months." The scale variable, which initially had five categories ranging from very good to very poor, was recoded into a binary variable with categories: perceived good health (very good and good), and poor perceived health (fair, bad, very bad).

Mental Health was measured using the 12-item version of the General Health Questionnaire (GHQ), with three or more points indicating poor mental health. The GHQ questions refer to questions in the past few weeks. The questionnaire was designed such that the possible answers indicating frequency are 'better/more than usual', 'as usual', 'less than usual', and 'much less than usual'.

Cervical screening was measured by using the question, 'time of pap smear'. The response categories of 'never had a pap smear' and 'had one three or more years ago', were combined to form the new category 'never had a pap-smear in the last three years.' The second category included in our analysis was, 'had a pap smear less than three years ago.' Noteworthy, the Spanish guideline on cytology screening recommends screening of females 25-65, every two years. Due to the limitation in the data however, which does not measure testing every two years, we used every three years as our cut-off point.

Mammography was measured by using the question, 'time of mammogram'. We created a dummy variable with two categories. The response categories of 'never had a mammogram' and 'had one two or more years ago', were combined to form the new category 'never had a mammogram in the last two years.' The second category included in our analysis was, 'had a mammogram less than two years ago'.

A dummy factor variable representing the survey years of 2011 (pre-law) and 2017 (post-law) was also created and included as an explanatory variable. The explanatory variables used in our models

are age, couple status (living arrangement), education, employment status, year of residence[56], and year (dummy-factor). The study population were characterized based on their region/nationality[57] as follows: 1) Spanish nationality (includes dual nationality); 2) foreign nationality, where we distinguish between migrants[58] from: i) EU-West and Global North (from here on Global North); ii) EU East and rest Eastern Europe (from here on Eastern Europe); iii) Northern Africa and the rest of Global South, and iv) Latin America. We also make a distinction between migrants based on the number of years of residence in Spain in order to test for duration effects. Accordingly, we distinguish between nationals who arrived in Spain for less than 10 years (short-term migrants), and those that arrived in Spain for 10 years or more (long-term migrants).

As Spain has a decentralized health care system, RDL 16/2012 was not applied uniformly in all autonomous regions of Spain. Some regions adopted legislative (to include, Laws, Orders and Instructions) and/or administrative actions to void or limit the effects of the law, while other regions applied the law exactly as it was intended (Cimas et al. 2016). Accordingly, the effect of the law change, if any, is not expected to apply uniformly across the different regions in Spain. We only include in our analysis, those regions where the RDL16/2012 was applied as intended or where any counter-responses were limited to administrative actions and/or a legislative response in the form of an Instruction. In this regard we included the regions of Andalusia, Aragon, Asturias, Balearic Islands, Castile & Leon, Catalonia, Castile-La-Mancha, Extremadura, Galicia, La Rioja, Madrid, and Region of Murcia.

The data were gathered using two-stage sampling design with stratification and are a representative sample of households and migrants in Spain INE (Instituto Nacional de Estadistica), (2017). Having regard to the feminization of the migration process, the fact that our sexual and reproductive health variables (mammogram and cervical screening) is mostly relevant to females over 25 years of age, and sample size limitations among the migrant population, our sample includes females between the ages of 25-64 years.

---

[56] Applicable to migrants only and coded into short-term (<10 years or less) and long-term (>= 10 years)
[57] Nationality is used throughout this article to mean the geographic regions that migrants are from (with respect to migrants) and/or persons having Spanish nationality.
[58] Migrants from the EU West and Global North and EU East and rest Eastern Europe are collectively referred to a EU-migrants while those from Latin America and the Global South are collectively referred to as non-EU migrants.

2.3.2   Analysis Plan

First, socio-demographic characteristics of the study population is described. Then, we fit logistic regression models to obtain odds ratio estimates of the likelihood of self-rated good health, good mental health, mammogram screening in the last two years and cervical screening in the last three years. We attempted to isolate the effects of the law change on health outcomes by including our dummy (pre-post) variable as a predictor variable. In determining whether there is any empirical support for duration effects, years of residence in Spain (short vs long term) is also included in the models as one of the main predictor variables. The tool used for analysis was Statistical Packaging for the Social Sciences (SPSS) version 21.

2.4   Findings

2.4.1 Description of the Variables

Table 2.1 describes the variables used in the study. In both survey years, the female migrant population of the studied sample (ages 25-64) is seen to be younger, on average than, the Spanish female population 25-64, except for migrants from the Global North. Migrants from the Global North were generally older, and in fact recorded the highest mean ages (See Table A2.1) in both 2011 and 2017 (44.22 years and 45.46 years respectively). Migrants from Northern Africa and the Global South were observed to be the youngest, with nearly 90% of these women being between 25-44 years in 2011, and about 70% being in the same age group in 2017. That is, migrant women from Northern Africa and the Global South were older in 2017 compared with 2011, recording mean ages of 34.29 years in 2011, and 39.85 years in 2017.

It is observed that Spanish women generally have higher levels of education when compared with migrants, except for migrants from the Global North who were observed to be the most educated. Nearly 4 in 10 women from the Global North attained the highest education levels (high vocational and university) in 2011, and this increased to just over half (52%) in 2017. Noteworthy, although a greater proportion of Spanish women (compared with migrants) had attained high vocational or university level education, a relatively high proportion of them were also found to have attained only up to compulsory secondary level education (48% and 41% in 2011 and 2017 respectively). In fact, among Spanish women a greater proportion attained up to compulsory secondary level education, when compared with women from Eastern Europe (38% and 29% in 2011 and 2017

respectively) and women from Latin America (37% and 31% in 2011 and 2017 respectively). It is women from Northern Africa and the rest of Global South who accounted for the lowest levels of education in both periods, with about 6 in 10 being educated up to end of compulsory level education in 2011, and this increased to nearly 7 in 10 by 2017. Moreover, less than 10% of women from Northern African and the rest of Global South had university level education in the pre-law period, although this slightly increased to about 15% in the post-law period. With two notable exceptions, living in a couple was generally the same for Spanish nationals and migrants, with about 70% of both populations reporting living in a couple in both periods. Among migrants from Northern Africa and the rest of the Global South however, about 8 in 10 women reported living in a couple in 2011 but this decreased to about 7 in 10 in 2017, in line with the proportions recorded among Spanish nationals and those from the Global and North and Eastern Europe. Among women from Latin America, about 6 in 10 women reported living as a couple in both periods, which is lower than the generally 7 in 10 seen across women from the other nationalities.

Latin American women accounted for the highest proportions employed in both periods, with 61% employed in 2011, and a slight increase to 69% in 2017. Among Spanish and other European (and rest of the Global North) women, about 50-55% were employed in 2011 compared with a slightly higher percentage (about 60%) in 2017. Migrant women from Northern Africa and the rest of the Global South accounted for the lowest proportions of employed in both periods; 38% in 2011 and a decrease to 30% in 2017. Generally, a greater proportion of migrants were unemployed compared with Spanish nationals except, women from the Global North and Northern Africans and Global South in the post-law period. Spanish nationals were the only group to present with an increase in the proportions unemployed over the two periods (albeit a slight increase from 15% in 2011 to 16% in 2017). Among all other groups there was a decrease in the proportions unemployed, which is consistent with the economic context, as by 2017 the economy had recovered to its level in 2007, the year before the 2008-14 economic crisis. The decrease in the proportions unemployed among women from Northern Africa and Global South is notable, decreasing from 20% in 2011 to 13% in 2017, however this did not translate into higher proportions being employed, but rather to higher proportions leaving the labour force. In the pre-law period, 42% of women from Northern African and the Global South were in the labour force, but this jumped to about 57% in the post-law period.

Table 2.1: Socio-demographic description of the study population by nationality and survey year.

	Spain		EU-West/Global North		EU East and rest Eastern Europe		Northern Africa and rest Global South		Latin America	
	2011/12	2017	2011/12	2017	2011/12	2017	2011/12	2017	2011/12	2017
Age										
25-34	23.3(1168)	19.3(1055)	12.2(18)	21.1(26)	39.4(100)	31.4(82)	64.3(83)	38.5(87)	36.6(185)	25.0(129)
35-44	28.1(1406)	27.4(1503)	18.9(28)	23.6(29)	37.0(94)	35.2(92)	25.6(33)	32.3(73)	35.2(178)	40.9(211)
45-54	26.7(1337)	28.8(1580)	30.4(45)	22.0(27)	15.7(40)	23.0(60)	6.2(8)	18.6(42)	21.2(107)	22.9(118)
55-64	21.8(1093)	24.5(1342)	38.5(57)	33.3(41)	7.9(20)	10.3(27)	3.9(5)	10.6(24)	6.9(35)	11.2(58)
Education										
Up to end compulsory education	47.8(2390)	40.6(2225)	37.2(55)	20.2(25)	38.3(98)	28.6(75)	60.5(78)	66.2(149)	37.2(193)	30.9(159)
2nd phase and medium vocational	22.1(1104)	21.1(1154)	23.0(34)	27.4(34)	43.8(112)	47.7(125)	31.8(41)	19.1(43)	35.6(180)	41.9(216)
High vocational and university	30.2(1510)	38.3(2099)	39.9(59)	52.4(65)	18.0(46)	23.7(62)	7.8(10)	14.7(33)	26.1(132)	27.2(140)
Employment Status										
Employed	53.4(2670)	60.2(3300)	50.0(74)	60.5(75)	54.7(140)	57.6(151)	38.0(49)	30.2(68)	61.0(308)	68.5(353)
Unemployed	14.8(743)	16.4(900)	18.2(27)	14.5(18)	24.2(62)	24.0(63)	20.2(26)	12.9(29)	20.6(104)	17.9(92)
Other Situations	31.8(1591)	23.4(1280)	31.8(47)	25.0(31)	21.1(54)	18.3(48)	41.9(54)	56.9(128)	18.4(93)	13.6(70)
Civil Status										
Live as couple	70.6(3532)	70.1(3800)	68.9(102)	66.9(81)	73.3(187)	70.4(183)	81.4(105)	70.4(157)	58.5(295)	61.0(313)
Not live as couple	29.4(1473)	29.9(1623)	31.1(46)	33.1(40)	26.7(68)	29.6(77)	18.6(24)	29.6(66)	41.5(209)	39.0(200)
Years of Residence in Spain										
0-9 years (Short-term)			54.4(80)	28.7(35)	64.7(165)	31.5(82)	54.3(70)	38.9(86)	65.0(328)	28.8(147)
10 +years (Long-Term)			45.6 (67)	71.3(87)	35.3 (90)	68.5(177)	45.7(59)	61.1(135)	35.0 (177)	71.2(363)
Outcome Variables										
Perceived Good Health last 12 months										
Yes	74.1(3706)	73.2(4010)	86.4(127)	80.6(100)	65.6(168)	74.7(195)	76.0(98)	64.9(146)	76.0(98)	69.9(360)
No	25.9(1298)	26.8(1469)	13.6(20)	19.4(24)	34.4(88)	25.3(66)	24.0(31)	35.1(79)	24.0(31)	30.1(155)
Good Mental Health last 12 months										
Yes	76.4(3821)	79.0(4299)	91.9(136)	86.3(107)	80.8(206)	80.0(208)	75.2(97)	85.4(181)	64.4(325)	76.4(394)
No	23.6(1183)	21.0(1142)	8.1(12)	13.7(17)	19.2(49)	20.0(52)	24.8(32)	14.6(31)	35.6(180)	23.6(122)
Breast Mammogram in last two years										
Yes	46.1(2306)	49.4(2708)	40.5(60)	50.4(62)	17.8(45)	25.7(67)	19.4(25)	16.2(36)	24.8(125)	34.8(179)
No	53.9(2691)	50.6(2769)	59.5(88)	49.6(61)	82.2(208)	74.3(194)	80.6(104)	83.8(186)	75.2(380)	65.2(335)
Pap- Smear in last three years										
Yes	71.5(3577)	73.7(4037)	66.7(98)	74.2(92)	52.5(134)	55.9(146)	51.9(67)	37.8(85)	66.5(336)	82.4(425)
No	28.5(1428)	26.3(1442)	33.3(49)	25.8(32)	47.5(121)	44.1(115)	48.1(62)	62.2(140)	33.5(169)	17.6(91)

Regarding the self-rated health indicator, the proportions self-reporting good health was highest among migrants from the Global North in both periods examined. This was followed in the pre-law period by women from Northern Africa and the rest of the Global South and from Latin America (76% among both groups), and in the post-law period by Eastern European women. Spanish women accounted for the third highest proportions in both periods examined. While women from Latin America and Northern Africa and the rest of the Global South were tied with the second highest proportions reporting good health in the pre-law period, by the post-law period, they accounted for the lowest proportions reporting good health (the lowest being women from Northern Africa and the rest of the Global South). Among all nationalities, except migrants from Eastern Europe, where the proportion self-reporting good health increased from 66% to 75%, the proportions reporting good health decreased over the two periods. The proportions decreased from 86% to 80% (Global North); 76% to 70% (Latin America); 74% to 73% (Spain); and 76% to 65% (Northern Africa and the rest of Global South).

In respect of mental health, the proportions reporting good health was highest among migrants from the Global North in both periods examined, and lowest among women from Latin America, also in both periods. In the pre-law period, women from Eastern Europe, Spain and Northern Africa and the rest of the Global South accounted for the second, third and fourth highest proportions reporting good mental health. By the post-law period however, it was women from Northern Africa and the rest of the Global South who accounted for the second highest proportions, followed by women from Eastern Europe and Spain in fourth position. The proportions reporting good mental health increased over the periods examined among all groups of women, except women from the Global North (92 % in 2011 vs. 86% in 2017), and women from Eastern Europe, where the proportions remained steady at 80% over both periods. Among Latin American women, the increase was from 64% in 2011 to 76% in 2017, whilst among women from Northern Africa and the rest of Global South there was an increase from 75% to 85% over both periods. Finally, 76% of Spanish women in 2011 reported good mental health, compared with 79% in 2017.

The proportions reporting a breast mammogram in the last two years was low across all nationalities, generally 50% or less. The proportions were highest among women from Spain (pre-law) and the Global North (post-law), who occupied the top two positions in both periods. They

were lowest among women from Northern Africa and the rest of the Global South, and those from Eastern Europe. In the pre-law period, women from Eastern Europe had slightly lower proportions (18%) than women from Northern Africa and the Global South (19%). However, by the post-law period, the proportions not only increased among Eastern European women (26%), but it was higher relative to women from Northern Africa and the rest of the Global South. Over the two periods examined, the proportions reporting performance of a breast mammogram increased among all groups, except women from Northern African and the rest of Global South where the proportions decreased from 19% in 2011, to 16% in 2017. In order of significance, migrants from Eastern Europe (18% in 2011 vs. 26% 2017) and Latin America (25 % in 2011 vs. 35% in 2017) also accounted for low proportions performing a mammogram. The highest proportions performing a mammogram were women from Spain (46% pre-law and 49% post-law), and women from the Global South (41% pre-law and 50% post-law).

Regarding cervical screening, women from Northern Africa and the rest of Global South (52% in 2011 vs. 38% in 2017), followed by those from Eastern Europe (53% in 2011 vs. 56% in 2017), accounted for the lowest proportions performing a cervical test in the last three years. Those from Northern Africa and the Global South were also the only group to have shown a decline in the proportions performing cervical screening over the two periods examined, as all other groups exhibited an increase. Especially noteworthy was Latin Americans, with the proportions performing a cervical test in the last three years increasing from 66% in 2011, to 82% in 2017. In the pre-law period, in order of significance, the proportions reporting cervical testing were highest among women from Spain, the Global North and Latin America. However, in the post-law period, the proportions were highest among Latin American women, and were roughly the same among women from Spain and the Global North.

2.4.2 Multivariate Results

Table 2.2 and Supplementary Tables A2.2-A2.6 show the multivariate analysis results of the change in the post-law period, in the likelihood of self-rated good health, good mental health, mammogram screening in the last two years, and cervical screening in the last three years, based on nationality. After controlling for the other explanatory variables in our models (See Supplementary Tables A2.2-A2.6), the following mixed results were observed.

The likelihood of self-rated good health was found to be statistically significant among all groups, except women from Northern African and rest of Global South. It is observed that the likelihood of self-rated good health decreased in the post-law period among Spanish nationals (OR_{2017} = 0.902; CI =0.822-0.989; p=0.028); women from the Global North (OR_{2017} = 0.327; CI =0.140 - 0.765; p=0.010); and those from Northern Africa and the rest of Global South although the decrease among the latter was not statistically significant. On the contrary, a statistically significant increase in the odds of self-rated good health was observed among women from Latin America (OR_{2017} = 1.516; CI =1.114-2.061; p=0.008) and those from Eastern Europe (OR_{2017} = 2.039; CI =1.318-3.153; p=0.001).

Statistically significant differences in the likelihood of good mental health were found among all women except those from Eastern Europe. Compared to 2011, the likelihood of good mental health increased in the post-law period among Latin Americans (OR_{2017} = 2.324; CI =1.704-3.169; p=0.000); Northern Africans and rest the rest of Global South (OR_{2017} = 1.945; CI =1.032-3.665; p=0.04); and Spanish nationals (OR_{2017} = 1.109; CI =1.009-1.220; p=0.033). On the contrary a decrease in the likelihood of good mental health in the post-law period was observed among migrants from the Global North (OR_{2017} = 0.358; CI =0.130-0.989; p=0.048).

Only among women from Northern Africa and the rest of Global South, and those from Latin America, was any statistically significant difference observed between the two periods, in the likelihood of performing a mammogram screening in the last two years. In the case of women from Northern Africa and the rest of the Global South, they were less likely in the post-law period to have performed a mammogram (OR_{2017} = 0.342; CI =0.169-0.693; p=0.003). Latin American women on the other hand were found to be more likely in the post-law period to have had a mammogram screening (OR_{2017} = 1.408; CI =1.003-1.978; p=0.048). Although not statistically significant, like Latin Americans, non-EU migrants also had greater odds of mammogram screening in the post-law period, while Spanish nationals recorded lower odds.

Finally, the likelihood of cervical screening was only statistically significant among Latin Americans who were nearly 3 times more likely in the post-law period to have had cervical screening, compared to 2011 (OR_{2017} =2.525; CI =1.818-3.508; p=0.000). Although not

statistically significant, among all other groups, the likelihood of cervical screening also increased in the post-law period, except among women from Northern Africa and the rest of Global South.

Table 2.3 and Supplementary Tables A2.2-A2.6, show the likelihood of self-rated good health, good mental health, mammogram screening in the last two years and cervical screening in the last three years relative to duration of residence. After controlling for the other explanatory variables in our models (See Supplementary Tables A2.2-A2.6), it is observed that duration of residence was a statistically significant predictor of self-rated good health among women from Northern Africa and the rest of Global South ($OR_{Short-term}$ =2.738; CI =1.430-5.240; p=0.002); Latin America ($OR_{Short-term}$=1.780; CI =1.289-2.457; p=0.000) and Eastern Europe ($OR_{Short-term)}$ =1.680; CI =1.073-2.632; p=0.023). In all cases, short-term migrants relative to long-term migrants had better self-rated health outcomes with the strongest association observed among Northern African women.

Significant differences in mental health among short-term migrants relative to long-term migrants were only observed among women from Eastern Europe and Latin America. In both cases, short-term migrants were found to be more likely as compared to long-term migrants, to exhibit better mental health outcomes. The odds ratios are, in order of significance, among migrants from Eastern Europe ($OR_{Short-term}$ =2.121; CI =1.254-3.589; p=0.005); and among those from Latin America ($OR_{Short-term)}$ =1.944; CI =1.404-2.692; p=0.000). With respect to mammogram screening, statistically significant differences were observed among only among women from the Global North. No statistically significant differences were observed among non-EU migrants or migrants from Eastern Europe. Among women from the Global North, it was found that short-term migrants were less likely than long-term-migrants to have performed a mammogram ($OR_{Short-term}$) =0.291; CI =0.150-0.568; p=0.000). Finally, duration of residence was not found to be a significant predictor of the likelihood of cervical screening, among any group of migrant women.

Table 2.2: Changes in the likelihood of perceived good health, good mental health, mammography and cervical test by nationality**

	Self-perceived Health				Mental Health				Mammogram				Cervical Smear			
	OR***	p-value	CI 95%		OR***	p-value	CI 95%		OR***	p-value	CI 95%		OR***	p-value	CI 95%	
Region of residence/Year 2017																
Spain	0.902	0.028*	0.822	0.989	1.109	0.032*	1.009	1.220	0.963	0.444	0.875	1.061	1.034	0.467	0.945	1.131
Global North	0.327	0.010*	0.140	0.765	0.358	0.048*	0.130	0.989	1.323	0.359	0.728	2.406	1.010	0.978	0.515	1.979
Eastern Europe	2.039	0.001*	1.318	3.153	1.307	0.290*	0.796	2.145	1.142	0.609	0.686	1.903	1.011	0.957	0.687	1.488
Northern Africa and rest Global South	0.573	0.058	0.323	1.018	1.945	0.040*	1.032	3.665	0.342	0.003*	0.169	0.693	0.955	0.870	0.553	1.650
Latin America	1.516	0.008*	1.114	2.061	2.324	0.000*	1.704	3.169	1.408	0.048*	1.003	1.978	2.525	0.000*	1.818	3.508

** Our reference category is the year 2011 (pre-law change). *** OR's (odds ratios) are adjusted for age, education, employment status, couple status, and duration of residence (migrants only)

*P<0.05

Table 2.3: Likelihood of perceived good health, good mental health, mammography and cervical test by duration of residence**

	Self-perceived Health				Mental Health				Mammogram				Cervical Smear			
	OR***	p-value	CI 95%		OR***	p-value	CI 95%		OR***	p-value	CI 95%		OR***	p-value	CI 95%	
EU West and Global South																
Short-term (0-9 years)	0.895	0.811	0.362	2.213	0.785	0.696	0.233	2.643	0.291	0.000*	0.150	0.568	1.080	0.834	0.528	2.206
Eastern Europe																
Short-term (0-9 years)	1.680	0.023*	1.073	2.632	2.121	0.005*	1.254	3.589	0.854	0.561	0.502	1.454	0.882	0.539	0.592	1.315
Northern Africa and rest Global South																
Short-term (0-9 years)	2.738	0.002*	1.430	5.240	0.889	0.753	0.426	1.855	1.265	0.580	0.550	2.911	0.955	0.870	0.553	1.650
Latin America																
Short-term (0-9 years)	1.780	0.000*	1.289	2.457	1.944	0.000*	1.404	2.692	1.102	0.592	0.771	1.575	1.212	0.265	0.865	1.698

** Our reference category is long-term migrants (>=10 years). *** OR's are adjusted for age, education, employment status, couple status, and duration of residence (migrants only)
*P<0.05

2.5 Discussion

To the extent that laws and policies affect health outcomes and health equity, we explored whether there is evidence to corroborate the view that RDL 16/2012, which was implemented in 2012 as a fiscal response to the 2008 economic crisis in Spain, and which tied health coverage to social security entitlements, would lead to poorer health outcomes, particularly among migrant women. To test our theory on the effects of the law on health outcomes, using descriptive pre-post comparisons and regression estimates, we assessed changes in four health outcomes, between the pre-law period (using survey year 2011/12) and the post-law period (using survey year 2017); namely, self-rated health, mental health, mammogram screening and cervical screening,

Consistent with previous studies, we found that migrant women were generally younger than the Spanish population, except migrant women from the Global North (Fernandez, Cavanillas and de Mateo, 2010; Alvarez-Nieto et al., 2015). The youngest migrant population was women from Northern Africa and the rest of the Global South, although these women were older in the post-law period in comparison with the pre-law period. The younger migrant population is characteristic of economic and family reunification migration, as explained in one study, due to a rising demand in jobs which engage women (Vidal-Coso and Miret-Gamundi, 2014), and with a significant focus on family reunification (Alvarez-Nieto, 2015).

We found that the most vulnerable population was women from Northern African and the rest of Global South, in support of previous literature (Zurriaga et al. 2009), and it is suggested that this resulted in them being most severely impacted by the law. In that, these women were found to have lower social status in comparison with other groups of women; having the highest proportion of lower educated, and the lowest proportion of those educated up to university level, although the latter proportion increased in the post-law period. In addition, these women had the lowest levels of employment, with the proportion decreasing in the post-law period. Moreover, whilst they had a lower proportion of unemployed in the post-law period relative to the pre-law period, this was consistent with an increase in the proportion outside the labour force, and not with an improvement in the proportion employed.

45

Overall, women from Northern Africa fared the worst in terms of mammogram and cervical screening, albeit a statistically significant association was not observed among them relative to cervical screening. In that, women from both Eastern Europe and Northern Africa and the rest of the Global South accounted for the lowest proportions performing these tests in both periods examined. However, while the proportion increased among women from Eastern Europe in the post-law period, it decreased among women from Northern Africa and the rest of the Global South. Moreover, among all other group of women, an improvement in the proportions reporting mammogram and cervical testing is seen in the post-law period. As well, and most importantly, when we estimated the effect of the law on mammogram screening, we found a significant decrease in mammogram screening in the post-law period among these women. Conversely, in both periods examined, women from Latin America accounted for the third highest proportion performing mammogram screening, and this proportion not only improved in the post-law period, but a statistically significant improvement was found in the post-law period. In relation to cervical screening, Latin Americans were the only group for which a statistically significant association was found, and it was positive, that is, they had a greater likelihood of cervical screening in the post-law period.

It is suggested that their vulnerable situation likely pre-disposed women from Northern Africa and rest Global South to more unfavourable health outcomes, as a result of the law reform. Other studies have linked the importance of social status to health outcomes and have found the effect of the 2008 economic crisis, which forms the basis of the law, to vary depending on the health outcome studied, and the social dimensions of inequality, such as socioeconomic positions (Gotsens et al., 2015). Moreover, one study has indicated that migrants are vulnerable to poorer health outcomes due to their exposure to worse social determinants, together with a higher risk of social exclusion from social services (Vazquez, Vargas and Aller, 2014), but that study did not contemplate migrant differentials. Still, other studies have highlighted the role of individual nationality in health outcomes and barriers to health (Hernández-Quevedo and Jiménez-Rubio2009). Furthermore, one study carried out in Spain has found language barriers, frequent changes of residence, and fear due to being in an irregular status, as barriers to breast screening and limited participation in breast cancer prevention programmes. As well, being of a lower socio-economic class has been found to be associated with greater barriers to mammogram screening

(March et al., 2018). Pulling all these together, it is plausible that a combination of language barriers, the greater likelihood of being in an irregular situation, and lower socio-economic status precluding these women affording private insurance, and the fact of the law itself which was more likely to exclude them from participation (real or perceived), led to a greater negative impact of the law on mammogram outcomes among these women.

In contrast, better socio-economic status, language advantage and acculturation effects help to explain the better mammogram and cervical outcomes observed in the post-law period among women from Latin America. Indeed, other studies have noted that Latin Americans enjoy an easier integration into the Spanish system relative to other migrant groups, especially based on language advantage (Lobera, 2021), enjoy socio-economic advantages, and no loss of the migrant paradox effect (Connor and Massey, 2010; Lobera, 2021; Zurriaga et al. 2009). Indeed, Latin American women fared very well, not only in comparison to women from Northern Africa and the rest of Global South, but also in comparison to Spanish nationals and EU-migrants, and in some instances, faring better than both EU-migrants and Spanish nationals. They had the highest proportion employed in both periods, with an improvement observed in the post-law period, and therefore it is posited that they may have been more likely to have private health insurance to buffer the effects of the law. In addition, they accounted for the third highest proportion of those with university level education, behind Spain and the Global North, with a slight improvement in the post-law period.

This better social status is plausibly attributable to the caliber of migrants from Latin America to Spain, who seem to be those with better social and human capital (Connor and Massey, 2010; Zurriaga et al., 2009), as well as due to sampling biases in the Spanish National Healthy Survey's (SNHS) sampling, which underrepresents migrants of lower socio-economic status according to one study (Hernandez-Quevedo and Jimenez-Rubio, 2009). Notwithstanding, based on these postulations and findings in the literature, we suggest that the findings regarding mammogram screening among women from Northern Africa and rest Global South and Latin America and the Caribbean, in part, are, attributable to the socio-demographic differentials between these two groups of women, which, in the face of the law reform, works to create greater barriers for women from Northern Africa and the rest Global South.

When we estimated the effect of the law on self-rated health, we found mixed results. A significant association among all groups of women was observed, except those from Northern Africa and rest Global South. Among those from the Global North and Spain, poorer self-rated health was predicted in the post-law period. As well, among women from Northern Africa and rest Global South, for whom no significant association was found, they had a lower proportion reporting good health in the post-law period. On the contrary, among women from Eastern Europe and those from Latin America, the post-law period was associated with significantly better self-rated health.

Whilst previous literature has generally found worse self-rated health and poorer mental health among migrants relative to the native population in Spain (Malmusi and Ortiz-Barreda, 2014; Rodriguez-Alvarez et al., 2014), one study has noted that socio-economic status is implicated in determining these outcomes. In that study, it was suggested that poorer self-rated health in migrants is associated with their lower social status, that is, lower levels of education and lower levels of employment. Yet, it was found that notwithstanding generally poorer self-rated health among migrants relative to natives, women from Latin America had better self-rated health than Spanish nationals, linked to a better social status (Rodriguez-Alvarez et al., 2014). A logical corollary from these findings is that where migrants are of higher social status, it is more likely that they will have better self-rated health as well as better mental health. In fact, in another study, it was found that EU-migrants report better levels of health when compared with Spanish nationals (Speciale and Regidor, 2010), also linked to their social status.

Indeed, these postulations may help to explain the decrease in the post-law period in the proportion of women from Northern Africa and rest Global South reporting good health, as they may have perceived the impact of the law to severely affect them based on existing barriers, linked to their socio-demographic and economic status. The postulations may even help to explain the positive association found in the post-law period among women from Latin America for whom it has already been noted, enjoy socio-demographic and economic advantages which may help to shield them from the effects of the law. However, these postulations do not explain why women from Eastern Europe reported better self-rated health, or why worse self-rated health was found among women from the Global North and Spain. It is suggested that the better self-rated health among women from Eastern Europe in the post-law period is on account of these women, unlike non-EU-

migrants, may have access to health care incentives either in Spain or from their home countries and therefore did not expect to be affected significantly by the new law. It is likely that the overall differences in self-rated health outcomes, are due to an interplay between socio-demographic characteristics and the impact or perceived impact of the economic recession and not solely related to the introduction of the law. In that, an economic crisis or other financial burdens, seem to add another layer of complexity with respect to the association between self-rated health and socio-demographic status that is not captured merely by the status quo of better social status.

Likewise, it is doubtful whether the earlier postulations put forward in the literature is sufficient to explain the mixed results found in this study regarding mental health. We found a significant increase in the likelihood of good mental health in the post-law period among women from Latin America, Northern Africa and rest Global South, and Spain, and a significant decrease among women from the Global North. Noteworthy, one Spanish study has described the economic recession (2008) as being linked with poorer mental health outcomes differentially based on labour market status and education level, and with social support systems (Cordoba-Dona et al., 2016). Another study focused on the impact of the recession on mental health found that working conditions of unemployment, low wages, instability and precariousness all put mental health at risk, particularly among vulnerable groups such as migrants and families with economic burdens. (Olivia et al., 2020). Notably, among women from Northern Africa and rest Global South, less than 15% were unemployed in the post-law period, in addition to the nearly 60% outside the labour force and therefore the deterioration in mental health tied to labour market status, is less likely to apply to these women. On the other hand, it is plausible that these women have a social network system which provides for them, and which appears to buffer the effect of their non-participation in the labour force. In other words, these women are not burdened by risk of losing their jobs, or by unemployment. On the contrary, job losses or concerns about same, and/or other economic burdens associated with the impact of the economic crisis, may help to explain the poorer mental outcomes among women from the Global North in the post-law period.

In addition to the suggestions put forward above, it is important to note that even with the implementation of the law, regional practices may have remained relatively unchanged, at least for some group of migrants, and in part could explain why Latin Americans had better cervical

and mammogram screening outcomes in the post-law period. In fact, studies have shown that the central government faced numerous oppositions to the law and different regions implemented different strategies aimed at combatting the effects of the law including, but not limited to, resorting to the implementation of administrative instructions, orders or regulations (Cimas et al. 2016; Bruquetas-Callejo and Perna, 2020). One author has stated that almost every region tried to limit or frustrate the law, Autonomous Communities tried to circumvent the restrictions, municipalities launched initiatives to allow access for irregular migrants, and healthcare professionals continued to treat irregular migrants notwithstanding the restrictions (Bruquetas-Callejo and Perna, 2020). Moreover, as early as 2015 there were talks to modify the law to make it less restrictive, and by 2018, it was fully overturned by the new government.

These confounding factors may have significantly minimized any impact of the law and could plausibly explain the general lack of worsening health outcomes generally, and more specifically among Latin American women in the post-law period. On the contrary, it does not appear that any counter measure was sufficient to buffer the effects of the law among women from Northern Africa and rest Global South. These findings point to the inequity that plagues women from Northern Africa and the rest of the Global South.

Generally, however, similar to the pre-post comparison of the proportions, the regression estimates show different patterns, according to the health outcome of interest and nationality. Relative to self-rated health, statistically significant associations were observed among all group of women, except those from Northern Africa and the rest of Global South. For mental health outcomes, significant associations were found among all population groups, except women from Eastern Europe. The likelihood of mammogram screening was only significant among women from Northern African and the rest of Global South and Latin American women, whilst cervical screening was found to be significant only among Latin American women. Based on these postulations and findings in the literature, we suggest that the findings in part, are, attributable to the socio-demographic differentials between these two groups of women which works to cretate barriers for African women.

Relative to duration of residence effects, statistically significant differences between short-term migrants (<10 years in Spain) and long-term migrants (>=10 years in Spain) were only observed with respect to self-rated health among women from Eastern Europe, Northern Africa and the rest of Global South and Latin America. In respect of mental health, significant differences were observed among women from Eastern Europe and from Latin America, while in relation to mammogram screening, significant associations were only found among women from the Global North. No significant associations were observed with respect to cervical screening.

It is generally observed that short-term migrants have better outcomes than long-term migrants, except for mammogram screening among nationals from the Global North. The former finding is in keeping with the literature which suggests that shorter-term migrants generally present with better health outcomes (Garcia Subirats et al. 2014; Malmusi & Barreda 2014; Hernando Rovirola et al. 2014). The latter finding of longer-terms migrants from the Global North presenting with better mammogram screening health outcomes, suggests a loss of the healthy migrant effect which is reduced as the duration of residence increases. That is, over time migrants are deemed to converge on the native-born population and the health advantage diminishes. In any event, the literature has made it clear that in terms of duration effects and the immigrant paradox, results are generally based on the outcome of study and the immigrant group being studied. Our findings therefore are in keeping with the literature.

Notably, our findings are limited in that, pre-post comparisons do not unmask or rule out confounding effects that may have affected the outcomes. In addition, although our findings clearly suggest that migrants are not a homogenous group and caution must be taken in any analysis which treats them as such, our disaggregation of migrant group by regions posed challenges in our analysis, the most notable of which was small sample sizes, the effects of which were not overcome by weighting the sample. The small sample sizes may have affected our results. As well, due to limited sample size, we were unable to restrict our analysis of mammogram and cervical screening based on the recommendations set out in Spain national cancer strategy guideline (2009). We did not limit our analysis on mammogram screening to women aged 50-69. Also due to limitations in the data our measurement of cervical testing was based on every three years instead of every two years as recommended in the cancer strategy guideline (2009). Only two of the variables directly

engage the health care system, therefore the impact of the law on the other variables may not have been readily observable. In addition, it is worth noting that the law was implemented at a time when the economic recession and its effect were being felt. Accordingly, it can be difficult to disentangle the effects of the law separately from that of the economic recession and therefore sometimes we had to rely on literature from the impact of the recession to help explicate our findings.

2.6 Conclusion

The pre- post law comparisons based on our descriptive statistics and our logistic regression estimates, reveal different patterns according to the health outcome of interest, as well as based on nationality. This is not uncommon, as studies have found that when different regions of nationalities are contemplated, there is a greater complexity, leading to variations in outcomes (Speciale and Regidor, 2010). We found that not all health outcomes of migrants were predicted to worsen in the post-law period. On the one hand, we found that the post-law period was consistent with poorer health outcomes among women from the Global North with respect to self-rated health and mental health. Additionally, among women from Northern Africa and the rest of Global South, there was a lesser likelihood of mammogram screening in the post-period whilst Spanish nationals were less likely in the post-law period to have self-rated good health. On the other hand, inconsistent with the literature and our expectations, the pre-post law comparisons of our multivariate logits revealed improvements in some health outcomes in the post-law period, the most notable being among Latin Americans. Among Latin Americans, there were improvements observed with respect to all four outcome variables: self-rated health, mental health, cervical screening, and mammogram screening. Migrants from Eastern Europe had improvements in self-rated health, while women from Northern Africa and the rest of Global South and Spanish women had better mental health outcomes in the post-law period.

However, although our findings were not always consistent with poorer health outcomes in the post-law period, this is not to suggest that the restrictive law had no impact on health outcomes, but rather, that there could be potential confounders masking the effects. This is particularly so when we consider that several countermeasures were implemented to counter the effects of the law as well as confounders due to the effects of the economic crisis. In any event, we did find that,

52

except for women from Eastern Europe and Latin America, the post-law period was associated with a greater likelihood of self-rated poor health. This suggests at least a perception by women of a negative implication of the law. In addition, although women from the Global North generally fared better in terms of social status, their mental health outcome was significantly worse in the post-law period. It is women from Northern African and the rest of Global South who were mainly afflicted with poorer health outcomes in the post-law period, in respect of self-rated health, and outcomes which directly engage the health care system (that is cervical testing and mammogram testing). This suggests greater barriers and greater inequality faced by these women relative to other groups. In that, women from Northern Africa and the rest of Global South moved from having the second highest proportion self-reporting good health in the pre-law period, to the lowest proportion in the post-law period. In addition, they had significantly worse mammogram screening outcomes in the post-law period and were the only group which had a decrease in the proportion reporting cervical screening. Moreover, while their mental health improved significantly in the post-law period, it is suggested that this is due to their poor participation in the labour force.

On the other hand, Latin Americans appear to have made significant gains in narrowing health inequality gaps, and in some instances, arguably, have eroded these disparities. They had better outcomes in the post-law period with respect to all four outcome variables and a greater proportion of these women (relative to all other groups) had cervical screening in the post-law period. On the contrary, with the exception of mental health outcomes, women from Northern African and the rest of Global South appear to have been unable to make breakthroughs in closing the health inequality. Our findings suggest that there may be barriers for non-EU foreigners to access to health care, especially for this collective, notwithstanding any countermeasures put in place to counteract the effects of the law. However, more follow-up studies using later survey years would need to be conducted to determine if these patterns are lasting or whether they are the result of shocks or biases in the SNHS data.

Overall, Spanish women, those from Eastern Europe, and those from the Global North, generally remained unaffected relative to the status quo, or had improved outcomes in the post-law period, with the exception of self-rated health (Spain, Global North) and mental health (Global North). Their interactions with the health care system despite the new law appeared to remain relatively

unchanged. It is suggested that Spanish nationals would have social security entitlements that would allow them to continue to access health care services, while nationals from the EU-West and Global North would generally have access to health care incentives either in Spain or from their home countries, that would not be accessible to other migrant groups, including private insurance. Yet, Latin American women behaved very differently from women from the Northern Africa and the rest of the Global South, albeit both groups are from developing regions. It is suggested that other advantages such as socio-economic and language accounts for their significantly better outcomes in the post-law period relative to women from the Northern Africa and the rest of the Global South. These findings suggest that there is a need to continue to monitor the implications of health policies on health outcomes, disparities, and determinants of health as advocated for in the WHO's HiAP approach. It also suggests that migrants are not a homogenous group and therefore targeted policies aimed at the improvement of health outcomes must, to be effective, account for the different needs of different migrant groups. These findings implicate the improvement of socio-economic conditions for those most vulnerable populations.

References

Agudelo-Suárez, A.A., Ronda, E., Vázquez-Navarrete, M.L., García, A.M., Martínez, J.M. and Benavides, F.G. (2013). Impact of economic crisis on mental health of migrant workers: what happened with migrants who came to Spain to work? *International Journal of Public Health*, [online] 58(4), pp.627–631. doi:10.1007/s00038-013-0475-0.

Alvarez-Nieto, C., Pastor-Moreno, G., Grande-Gascón, M.L. and Linares-Abad, M. (2015). Sexual and reproductive health beliefs and practices of female immigrants in Spain: a qualitative study. *Reproductive Health*, 12(1). doi:10.1186/s12978-015-0071-2.

Andersen, R. and Newman, J.F. (1973). Societal and individual determinants of medical care utilization in the United States. *The Milbank Memorial Fund Quarterly. Health and Society*, [online] 51(1), pp.95–124. Available at: https://pubmed.ncbi.nlm.nih.gov/4198894/.

Andersen, R.M. (1995). Revisiting the behavioral model and access to medical care: does it matter? *Journal of Health and Social Behavior*, [online] 36(1), pp.1–10. Available at: https://pubmed.ncbi.nlm.nih.gov/7738325/.

Bruquetas-Callejo, M. and Perna, R. (2020). Migration and Healthcare Reforms in Spain: Symbolic Politics, Converging Outputs, Oppositions from the Field. *South European Society and Politics*, 25(1), pp.75–98. doi:10.1080/13608746.2020.1769342.

Carmona, R., Alcázar-Alcázar, R., Sarria-Santamera, A. and Regidor, E. (2014). Use of health services for immigrants and native population: a systematic review. *Revista espanola de salud publica*, [online] 88(1), pp.135–55. doi:10.4321/S1135-57272014000100009.

Carrasco-Garrido, P., Jiménez-García, R., Barrera, V.H., de Andrés, A.L. and de Miguel, Á.G. (2009). Significant differences in the use of healthcare resources of native-born and foreign born in Spain. *BMC Public Health*, [online] 9(1). doi:10.1186/1471-2458-9-201.

Castano, J., Ospina, J.E., Caylà, J.A. and Greer, S.L. (2016). Restricting Access to Health Care to Immigrants in Barcelona. *International Journal of Health Services*, [online] 46(2), pp.241–261. doi:10.1177/0020731416637174.

Cimas, M., Gullon, P., Aguilera, E., Meyer, S., Freire, J.M. and Perez-Gomez, B. (2016). Healthcare coverage for undocumented migrants in Spain: Regional differences after Royal Decree Law 16/2012. *Health Policy*, [online] 120(4), pp.384–395. doi:10.1016/j.healthpol.2016.02.005.

Collazos Sánchez, F., Ghali Bada, K., Ramos Gascón, M. and Qureshi Burckhardt, A. (2014). Mental health in the immigrant population in Spain. *Revista espanola de salud publica*, [online] 88(6), pp.755–61. doi:10.4321/S1135-57272014000600008.

Committee on Economic, Social and Cultural Rights (2000). *General Comment No. 14: The right to highest attainable standard of health*.

Connor, P. and Massey, D.S. (2010). Economic Outcomes among Latino Migrants to Spain and

the United States: Differences by Source Region and Legal Status. *International Migration Review*, 44(4), pp.802–829. doi:10.1111/j.1747-7379.2010.00826.x.

Córdoba-Doña, J.A., Escolar-Pujolar, A., San Sebastián, M. and Gustafsson, P.E. (2016a). How are the employed and unemployed affected by the economic crisis in Spain? Educational inequalities, life conditions and mental health in a context of high unemployment. *BMC Public Health*, [online] 16(1). doi:10.1186/s12889-016-2934-z.

Fernandez, M.A.L., Cavanillas, A.B. and de Mateo, S. (2010). Differences in the reproductive pattern and low birthweight by maternal country of origin in Spain, 1996-2006. *The European Journal of Public Health*, [online] 21(1), pp.104–108. doi:10.1093/eurpub/ckp224.

Garcia-Subirats, I., Vargas, I., Sanz-Barbero, B., Malmusi, D., Ronda, E., Ballesta, M. and Vázquez, M. (2014). Changes in Access to Health Services of the Immigrant and Native-Born Population in Spain in the Context of Economic Crisis. *International Journal of Environmental Research and Public Health*, [online] 11(10), pp.10182–10201. doi:10.3390/ijerph111010182.

Gispert Magarolas, R., Clot-Razquin, G., del Mar Torné, M., Bosser-Giralt, R. and Freitas-Ramírez, A. (2008). Diferencias en el perfil reproductivo de mujeres autóctonas e inmigrantes residentes en Cataluña. *Gaceta Sanitaria*, 22(6), pp.574–577. doi:10.1016/s0213-9111(08)75356-1.

Gotsens, M., Malmusi, D., Villarroel, N., Vives-Cases, C., Garcia-Subirats, I., Hernando, C. and Borrell, C. (2015). Health inequality between immigrants and natives in Spain: the loss of the healthy immigrant effect in times of economic crisis. *The European Journal of Public Health*, [online] 25(6), pp.923–929. doi:10.1093/eurpub/ckv126.

Hernández-Quevedo, C. and Jiménez-Rubio, D. (2009). A comparison of the health status and health care utilization patterns between foreigners and the national population in Spain: New evidence from the Spanish National Health Survey. *Social Science & Medicine*, [online] 69(3), pp.370–378. doi:10.1016/j.socscimed.2009.05.005.

Hernando Rovirola, C., Ortiz-Barreda, G., Galán Montemayor, J.C., Sabidó Espin, M. and Casabona Barbarà, J. (2014). Infección VIH/Sida y otras infecciones de transmisión sexual en la población inmigrante en España: revisión bibliográfica. *Revista Española de Salud Pública*, 88(6), pp.763–781. doi:10.4321/s1135-57272014000600009.

Instituto Nacional de Estadistica (2021). *Población por edad (3 grupos de edad), Españoles/Extranjeros, Sexo y Año*. [online] INE. Available at: https://www.ine.es/jaxi/Datos.htm?path=/t20/e245/p08/l0/&file=03005.px [Accessed 1 Dec. 2022].

Instituto Nacional de Estadistica (2017). *INEbase / Society /Health /National Health Survey / Methodology*. [online] INE. Available at: https://www.ine.es/dyngs/INEbase/en/operacion.htm?c=Estadistica_C&cid=1254736176783&menu=metodologia&idp=1254735573175 [Accessed 22 Dec. 2022].

Instituto Nacional de Estadística (2012). *Movimiento Natural de la Población e Indicadores Demográficos Básicos. Natalidad*.

Juárez, S.P., Honkaniemi, H., Dunlavy, A.C., Aldridge, R.W., Barreto, M.L., Katikireddi, S.V. and Rostila, M. (2019). Effects of non-health-targeted policies on migrant health: a systematic review and meta-analysis. *The Lancet Global Health*, 7(4), pp.e420–e435. doi:10.1016/s2214-109x(18)30560-6.

Kamperman, A.M., Komproe, I.H. and de Jong, J.T.V.M. (2007). Migrant mental health: A model for indicators of mental health and health care consumption. *Health Psychology*, 26(1), pp.96–104. doi:10.1037/0278-6133.26.1.96.

Keygnaert, I., Guieu, A., Ooms, G., Vettenburg, N., Temmerman, M. and Roelens, K. (2014). Sexual and reproductive health of migrants: Does the EU care? *Health Policy*, [online] 114(2-3), pp.215–225. doi:10.1016/j.healthpol.2013.10.007.

Legido-Quigley, H., Otero, L., Parra, D. la, Alvarez-Dardet, C., Martin-Moreno, J.M. and McKee, M. (2013). Will austerity cuts dismantle the Spanish healthcare system? *BMJ*, [online] 346. doi:10.1136/bmj.f2363.

Lobera, J. (2021). Postcolonial Bonds? Latin American Origins, Discrimination, and Sense of Belonging to Spain. *American Behavioral Scientist*, 65(9), p.000276422199675. doi:10.1177/0002764221996757.

March, S., Villalonga, B., Sanchez-Contador, C., Vidal, C., Mascaro, A., Bennasar, M. de L. and Esteva, M. (2018). Barriers to and discourses about breast cancer prevention among immigrant women in Spain: a qualitative study. *BMJ Open*, [online] 8(11), p.e021425. doi:10.1136/bmjopen-2017-021425.

Oliva, J., López-Varcárcel, B.G., Pérez, P.B., Peña-Longobardo, L.M., Garrido, R.M.U. and González, N.Z. (2020). El impacto de la Gran Recesión en la salud mental en España. Informe SESPAS 2020. *Gaceta Sanitaria*, [online] 34(Suppl 1), pp.48–53. doi:10.1016/j.gaceta.2020.05.009.

Malmusi, D. and Ortiz-Barreda, G. (2014). Health inequalities in immigrant populations in Spain: a scoping review. *Revista espanola de salud publica*, [online] 88(6), pp.687–701. doi:10.4321/S1135-57272014000600003.

Nielsen, S.S. and Krasnik, A. (2010). Poorer self-perceived health among migrants and ethnic minorities versus the majority population in Europe: a systematic review. *International Journal of Public Health*, [online] 55(5), pp.357–371. doi:10.1007/s00038-010-0145-4.

Peralta-Gallego, L., Gené-Badia, J. and Gallo, P. (2018). Effects of undocumented immigrants exclusion from health care coverage in Spain. *Health Policy*. doi:10.1016/j.healthpol.2018.08.011. Population Action International (2015). *Rights and Results: A Reproductive Health Index*. [online]

PAI. Available at: https://pai.org/resources/rights-results-reproductive-health-index/ [Accessed 1 Dec. 2022].

Otero-Garcia, L., Goicolea, I., Gea-Sánchez, M. and Sanz-Barbero, B. (2013). Access to and use of sexual and reproductive health services provided by midwives among rural immigrant women in Spain: midwives' perspectives. *Global Health Action*, 6(1), p.22645. doi:10.3402/gha.v6i0.22645.

Regidor, E., Barrio, G., Bravo, M.J. and de la Fuente, L. (2013). Has health in Spain been declining since the economic crisis? *Journal of Epidemiology and Community Health*, [online] 68(3), pp.280–282. doi:10.1136/jech-2013-202944.

Río, I., Castelló, A., Jané, M., Prats, R., Barona, C., Más, R., Rebagliato, M., Zurriaga, O. and Bolúmar, F. (2010). Calidad de los datos utilizados para el cálculo de indicadores de salud reproductiva y perinatal en población autóctona e inmigrante. *Gaceta Sanitaria*, 24(2), pp.172–177. doi:10.1016/j.gaceta.2009.09.013.

Rodríguez Álvarez, E., González-Rábago, Y., Bacigalupe, A., Martín, U. and Lanborena Elordui, N. (2014). Inmigración y salud: desigualdades entre la población autóctona e inmigrante en el País Vasco. *Gaceta Sanitaria*, 28(4), pp.274–280. doi:10.1016/j.gaceta.2014.01.010.

Salinero-Fort, M.Á., Jiménez-García, R., del Otero-Sanz, L., de Burgos-Lunar, C., Chico-Moraleja, R.M., Martín-Madrazo, C. and Gómez-Campelo, P. (2012). Self-rated Health Status in Primary Health Care: The Influence of Immigration and Other Associated Factors. *PLoS ONE*, [online] 7(6), p.e38462. doi:10.1371/journal.pone.0038462.

Speciale, A.M. and Regidor, E. (2010). Understanding the Universality of the Immigrant Health Paradox: The Spanish Perspective. *Journal of Immigrant and Minority Health*, 13(3), pp.518–525. doi:10.1007/s10903-010-9365-1.
United Nations (1966). *International Covenant on Economic, Social and Cultural Rights*. [online] OHCHR. Available at: https://www.ohchr.org/en/instruments-mechanisms/instruments/international-covenant-economic-social-and-cultural-rights.

Vázquez, M.L., Terraza-Núñez, R., S-Hernández, S., Vargas, I., Bosch, L., González, A., Pequeño, S., Cantos, R., Martínez, J.I. and López, L.A. (2013). Are migrants health policies aimed at improving access to quality healthcare? An analysis of Spanish policies. *Health Policy*, [online] 113(3), pp.236–246. doi:10.1016/j.healthpol.2013.06.007.

Vázquez, M.L., Vargas, I. and Aller, M.-B. (2014). Reflexiones sobre el impacto de la crisis en la salud y la atención sanitaria de la población inmigrante. Informe SESPAS 2014. *Gaceta Sanitaria*, 28, pp.142–146. doi:10.1016/j.gaceta.2014.02.012.

Vidal-Coso, E. and Miret-Gamundi, P. (2014). The labour trajectories of immigrant women in Spain: Are there signs of upward social mobility? *Demographic Research*, 31(Article 13), pp.337–380. doi:10.4054/demres.2014.31.13.

Villarroel, N. and Artazcoz, L. (2012). Heterogeneous patterns of health status among immigrants in Spain. *Health & Place*, [online] 18(6), pp.1282–1291. doi:10.1016/j.healthplace.2012.09.009. World Health Organization (1946). *Constitution of the World Health Organization, 22nd July 1946 (14 UNTS 185), OXIO 132*.

Zurriaga, O., Martínez-Beneito, M.A., Galmés Truyols, A., Torne, M.M., Bosch, S., Bosser, R. and Portell Arbona, M. (2009). Recourse to induced abortion in Spain: profiling of users and the influence of migrant populations. *Gaceta Sanitaria*, [online] 23 Suppl 1, pp.57–63. doi:10.1016/j.gaceta.2009.09.012.

CHAPTER 3

An Evaluation of the effect of liberal abortion laws on abortion incidences and trends among native and migrant women: The case of Spain, following the introduction of Organic Law 2/2010

Abstract

The aim of this study was to examine whether Spain's Organic Law 2/2010 which decriminalised voluntary (elective) abortions generally up to 14 weeks, would lead to a significant change in the abortion rates. We also explored nationality differentials. The intervention was set to December 2010. This study is framed around the postulations put forward by those opposed to the reform on the grounds it would lead to an increased number of abortions inconsistent with international and regional goals towards reducing abortion incidences. We first provide a description of the abortion trends, where it was observed that they differ based on nationality. We found that migrant women from Latin America and the Caribbean had the highest rates of abortions, followed by those from Asia/Oceania and Africa. Pre-intervention, although the global abortion trends showed an increase, a decline was observed among all women except Spanish nationals. In the post-intervention period, a decline was observed in the global trends, as well as among all groups of women, except women from the EU-West and Global North. As well, the declining trends did not continue among women from Latin America and the Caribbean and Spain. Further, although a downward trend was observed among Asian/Oceanic women, they had higher rates of abortion in the post-intervention period relative to the pre-intervention period. African and Eastern European women had the greatest percentage decline in abortion rates between the two periods, while women from the EU-West and Global North had the greatest percentage increase between the two periods. To assess the impact of the reform on abortion trends, we employed ARIMA time series modelling. We found that despite a 3% increase in the global rates of abortion over the period, there was insufficient evidence to suggest that the reform significantly altered the trends in these rates. However, it was found that an estimated 3.4 points increase in abortion rates among Asian/Oceanic women, was related to the law change. These findings suggest inequalities between nationalities in their ability to access abortion, and that abortion laws alone cannot fully explain trends of abortion rates - the context within which these laws operate are a key component to shaping the laws' impact. Socio-economic, political, cultural and other like factors are therefore implicated. Our study reinforces that the implications of law reforms on abortion rates is best studied at disaggregated nationality levels.

Key Words: Law reform, abortion rates, migrants, natives

3.1 Introduction and Background

The denial of access to safe and legal abortions violates the right to health, and runs contrary to the protection, promotion and fulfilment of sexual and reproductive rights contemplated by international and human rights law (UN Special Rapporteur, 2011; Center for Reproductive Rights, 2004; Center for Reproductive Rights, 2008). Against this backdrop, human rights treaty bodies and international and European consensus, advocates for, and recommends governments to decriminalize abortion (UN Special Rapporteur, 2011; Van Lancker, 2015). Adhering to the increasingly progressive standards regarding sexual and reproductive health rights, including abortion rights, espoused in various international and regional treaties, instruments and consensus documents, the Spanish government in 2010, among other initiatives aimed at fulfilling the sexual and reproductive health right agenda, introduced Organic Law 2/2010 on Sexual and Reproductive Health and the Voluntary Termination of Pregnancy ("Organic Law 2/2010" or "the law" or "the reform") (*Ley Orgánica 2/2010)*. The effect of the law was to regulate the voluntary interruption of pregnancy, decriminalizing elective abortions (that is, at the request of the woman) up to fourteen weeks of pregnancy generally, and up to twenty-two weeks if there is a serious risk to the life or health of the pregnant woman or fetus.

To a large extent, the introduction of the law brings Spain closer into conformity with international and regional consensus regarding the guarantee of sexual and reproductive health rights. Prior to its introduction, elective abortions were legally prohibited. Its predecessor, Organic Law 9/1985, allowed induced abortions (hereinafter, abortions) in three specific cases: i) a serious risk to the physical or mental health of the pregnant woman and in such a case the abortion could be performed at any time; ii) the woman became pregnant as a result of rape, provided that the abortion was performed within the first twelve weeks of gestation; or iii) a risk of malformations or defects, physical or mental, in the fetus, provided that the abortion was performed within twenty two weeks of gestation. Provided the reasons above were established, a woman could undergo an abortion in either a public or private health centre, under a doctor's supervision and with the express consent of the woman. Outside of those cases, there were criminal sanctions for both doctors and women who did not perform abortions in accordance with the law.

On the one hand, Organic Law 2/2010 is consistent with realizing the progressive standards regarding reproductive health rights espoused in international and regional law. On the other hand, there is a school of thought which suggests that the law change is inconsistent with both the United Nations goals of, and with the World Health Organization's recommendations for States to establish policies aimed at, decreasing the number abortions (CEDAW 61th Session United Nations, 2014). This school of thought is prefaced on the notion that more liberal abortion laws will lead to more abortions. However, the implications of the reformed law on abortion outcomes have little been studied in Spain and is uncertain. We therefore explore trends of abortion rates in Spain to determine whether there is empirical evidence to corroborate a finding that the law change has significantly impacted such trends and rates.

3.2 Laws and abortion incidence

Studies have shown that restrictive abortion laws and policies preclude access to abortions and lead to unmet abortion needs, drives abortions underground, and create different categories of abortions determined by one's social class – that is, legal versus illegal, and safe versus unsafe, thereby leading to more unsafe abortions (Arisi, 2003; Aborto. España: las claves de la polémica, 1983; Ganatra et al. 2017), but they do not lead to lower abortion rates (Bearak et al., 2020). Arguably, the logical corollary of these findings is that abortion laws generally do not affect the decision-making process as to whether a woman chooses to have an abortion or not, rather, these laws are a key component in determining the environment within which abortions take place. Accordingly, more liberal abortion laws are not expected to lead to higher abortion rates any more than more restrictive abortion laws have been found to not lead to lower abortion rates. In fact, one study which assessed the impact of decriminalisation of abortion laws in Europe, including Spain, found that decriminalisation had no effect on trends of abortion rates and did not lead to higher abortion rates (Peiro, 2001).

On the contrary, another study which assessed how the legal status of abortion affects abortion rates in a range of Eastern European countries, found that, in countries where abortion is only available to save the mother's life or for medical reasons (akin to what obtained in Spain immediately before the law change), such countries had abortion rates that were 5 per cent of the level observed in countries with elective abortions (Levine and Staiger, 2004). That same study

found a 25% reduction in abortion rates when moderate restrictions are imposed, and significantly lower abortion rates in countries/years where abortion was available for medical or social reasons, compared with situations in which abortion was available at the request of women. Similarly, one US study which examined restrictive state policies and abortion rates from 2000-2014, found evidence that a highly restrictive state legislative climate is associated with a lower abortion rate (Brown et al., 2020). Still, other studies have found no evidence that abortion rates were lower in settings where abortion was restricted (Bearak et al. 2020; Wetstein 1995; Sedgh et al. 2016).

Importantly, extant literature suggests that abortion incidences are sensitive to nationality, therefore differential analysis is critical. One study has found that in countries with high rates of migration, low and high rates of abortion can co-exist if migrants have abortions at different rates compared to the native population (Singh et al. 2018). Other studies have found variations in abortion outcomes based on nationality, with women from Latin America and the Caribbean and Sub-Saharan Africa appearing to have the highest overall abortion rates, and those from North America, the lowest (Bearak et al. 2020; Sedgh et al. 2016). Differential patterns are also expected in the case of Spain which has a significant proportion of the population being migrants from different regions. Studies in Spain have found among migrant women compared with natives, less access to family planning and contraception; a lower uptake of gynaecological healthcare; greater engagement in risky sexual behaviours and a greater likelihood of HIV; greater risk of unintended pregnancies and poorer pregnancy outcomes (Keygnaert et al., 2014; Hernando Rovirola et al. 2014; Carmona et al., 2014), all factors which suggest a greater risk of abortion. The literature also suggests disproportionately high abortion rates among migrant women in Spain, especially among those from Africa (Zurriaga et al. 2009; Ruiz-Ramos et al., 2012; Rodriguez-Alvarez et al, 2016; Hernandez-Quevedo and Jimenez-Rubio,2009; Keygnaert et al., 2014; Malmusi and Perez, 2009; Perez et al., 2019; Perez et al., 2014; Ferrer, 2012)). These national/regional disparities in abortion rates, necessitate examining nationality data to account for differentials which may be masked at the aggregate level.

Yet, although there are several studies in Spain which focuses on factors affecting abortion outcomes (Zurriaga et al. 2009; Ruiz-Ramos et al., 2012; Rodriguez-Alvarez et al, 2016; Hernandez-Quevedo and Jimenez-Rubio,2009; Keygnaert et al., 2014; Malmusi and Perez, 2009;

Perez et al., 2019; Perez et al., 2014; Ferrer, 2012), the impact of abortion laws on abortions rates has been little studied. To the knowledge of the researcher only one empirical study in Spain has attempted to answer the question of whether liberal abortion laws lead to increased abortions (Peiro, 2001). That study, pre-dates the 2010 law change. Furthermore, the 'liberalised' laws contemplated by that study are based on restrictive abortion laws of 1985, albeit more liberal in comparison to the pre-1985 abortion laws which made abortions completely illegal in Spain. In addition, the assessment in that study is limited to the general population, without regard to whether specific groups of women are differentially affected by the law change. Yet, several studies have documented inequalities in abortion rates and therefore, a failure to disentangle any effects of the law based on nationality may mask important variations.

We investigated trends of abortion rates in Spain using time series data, to answer the question of whether liberalised abortion laws affect such rates. Put simply, we sought to answer the questions: (i) have the rates of abortion changed since the introduction of the law (that is, have the trends in the rates of abortion changed), and (ii) if they have changed, are the changes statistically significant such that they are attributable to the law reform?

3.3 Methodology
3.3.1 Data
We used abortion data obtained from the national abortion registries in Spain from 2003 to 2017 published by Ministerio de Sanidad (Ministerio de Sanidad, n.d). Abortion reporting is mandatory in Spain and therefore the reporting system provides complete and reliable abortion data. Both public and private centres are accredited to perform abortions in Spain and both form part of the reporting system. Each time an abortion is performed, it is registered at the relevant centre along with socio-demographic information about the patient obtaining the abortion. Centres forming part of the reporting system periodically submit collected data to the Ministry of Health where it is entered into a central database.

Time series abortion data for the period 2003-2017 were used, however, because the data is not disaggregated by nationality for the years 2003-2007, where the analysis is stratified by nationality, data for the period 2008-2017 were employed. The intervention (that is, the law change) was set

for December 2010 for ease, but it is worth noting here that the reform occurred in or about July of 2010. For the measure of abortion, annual abortion rates, that is, the number of abortions per 1,000 women aged 15-49 years, was used ("**abortion rates**"). Abortion rates have been described as the standardised way of calculating abortion trends relative to the population (Association for Improvements in Maternity Services, Ireland, 2018). According to a report from the Centre for Disease Control (CDC), for which abortion rates and abortion ratios were used in the analysis, abortion rates adjust for differences in population size and reflect the likelihood of abortions among women in particular groups (Jatlaoui et al., 2017). Moreover, a study from Guttmacher Institute which also used abortion rates to report on global trends in abortion incidence, notes that, while absolute numbers are influenced by population size, annual abortion rates are not (Singh et al., 2018). In addition to annual abortion rates, total abortion rates ("**synthetic abortion rate**" or "**abortion index**") were calculated, which is a cohort measure of the lifetime risk of abortion if a woman were to live through her reproductive years experiencing the age-specific abortion rates within a given year. The indicator can be calculated using period measures (that is, age-specific abortion rates) or it can be approximated by finding the product of the abortion rate and the length of the reproductive period. We calculated the abortion index using period measures, as age-specific abortion data was available. As synthetic abortion rates are not the average number of abortions within a year, and only indicate the abortion standards for the year, the abortion rates were used as the main measure to determine the impact of the law change on abortion rates, whilst age-specific abortion rates and synthetic abortion rates were used to help explicate the findings.

Yearly female resident population data was used as the denominator in the calculation of abortions rates. These population figures were obtained from the Statistical Institute of Spain, (INE). Abortion rates for the entire population were calculated based on the population of women 15-49 years. For adolescents 20 years or less, abortion rates were calculated based on the number of women 15-19 years; while for women 45 years and over, abortion rates were calculated based on the number of women 45-49 years.

Data was analysed based on nationality. Five nationality/regional groupings were included, namely: Spain; EU-West and Global North (to include non-Eastern Europe, USA, Canada, Australia and New Zealand); Eastern Europe; Latin America and the Caribbean (to include

Mexico); Asia/Oceania (excluding Australia and New Zealand) and Africa. Only women resident in Spain were included in the analysis, such that, as a first step, non-residents were removed from the dataset. The data was further treated as follows: women residing in Spain with dual nationality were included in the sample and treated as Spanish nationals. Where country of birth data was available, but nationality data was missing, those women were removed from dataset with one notable exception, that is, where women's country of birth was Spain. In the latter case, those women were treated as Spanish nationals. Women excluded from the data represented less than 1% of the sample.

3.3.2 Analysis Plan

We performed descriptive analysis to describe patterns and trends in abortion rates in our study population. First, abortion rates (including 5-years age-specific abortion rates) and abortion indexes were calculated for the aggregate study population as well as based on nationality. We then calculated means for the pre-intervention and post-intervention period and used said means to calculate the percentage changes in the abortion rates, relative to the post-intervention period.

Finally, we employed interrupted time series (ITS) methodology to determine the impact of the law change on abortion rates. ITS is known as the most reliable quasi-experimental methodologies for measuring the impact of public intervention in a non-randomized setting (Penfold and Zhang, 2013).

While there are different ITS methodologies, ARIMA modelling was used in this study. ARIMA modelling is one way of analysing time series data and is an improvement over a simple statistical comparison of time trends before and after an intervention. Simply comparing the means before and after an intervention may result in overestimations or underestimations of the intervention effect due to the failure of the comparative method to take into account any secular trends in the data. Whilst there are mixed views on the number of data points needed for an ARIMA analysis and there is consensus that the more data points the better, studies have shown that, except where seasonal trends are present, having at least six data points across the pre-intervention and the post-intervention period is sufficient (Hyndman and Kostenko, 2007).

Notably, there are different ways to estimate the effect of an intervention, and has been indicated in one study, there is lack of uniformity, standardisation, or guideline as to which method should be used. (Hudson, Fielding and Ramsay, 2019). The most noteworthy estimates are those based on a trend change or a level change. A change in level corresponds to the difference in the time point of interest to the predicted pre-intervention trend, whereas a trend change is the difference between the post- and pre-intervention slopes (that is, a change in slopes). One study suggests that the different effect estimates cannot be combined (Hudson, Fielding and Ramsay, 2019). In this study we use level effect, which is analogous to the difference in mean scores before and after the intervention. This method is consistent with our mostly pre-and-post-intervention comparisons of proportions and rates throughout the study.

ARIMA modelling was used in this study over other ITS methods because of its advantage of being able to account for underlying trends and autocorrelation, and to control for non-stationarity. Values for abortion rates are highly autoregressive, and their error terms are likely to be correlated (Wetstein, 1995). ARIMA modelling has the advantage of removing trends from the data to make it stationary and not dependent on time. Therefore, the summary statistics (i.e. mean or the variance of the observations) calculated on the time series, are constant throughout time.

Selecting the most appropriate ARIMA model is generally a challenging and time-consuming process, but attempts have been made by software companies to automate and simplify the process (Schaffer et al., 2021). The standard notation used in ARIMA is (p,d,q) where the parameters are substituted with integers to indicate the specific model being used. A zero indicates no use of that element of the model. For a detailed guide on ARIMA models in evaluating large-scale interventions, see Schaefer et al. 2021. In SPSS, the automation algorithm is expert modeler, and was used to identify the best model applicable to the data, by automatically checking for and correcting where applicable, issues related to autocorrelations and stationarity. In all cases the expert modeler algorithm recommended either a 0,1,0 model or a 0,0,0 model. More specifically, the model used to assess the impact of the law change on abortion rates was the ARIMA (0,1,0) model for the entire population, EU-West and Global North, Eastern Europe and Africa. An ARIMA (0,0,0) model was used in the case of Spain, Latin America and the Caribbean and

Asia/Oceania. An ARIMA (0,0,0) is a white noise model, whereby the outcome indicator (A_t) is modeled as

$$A_t = \varepsilon_t \qquad (2)$$

An ARIMA (0,1,0) model is one where the outcome indicator (A_t) is modeled as

$$A_t = A_{t-1} + \varepsilon_t \qquad (3)$$

(also known as random walk)

Notwithstanding our use of expert modeler, we also engaged in a manual diagnosis regarding the identification, selection, and estimation of the ARIMA model and determined that the recommendations suggested by expert modeler were sound. In this regard we checked our data for autocorrelations and ruled that out in all cases. We also checked the data to determine whether it was stationary and where it was not, the noise was factored out to make the data compliant with the requirements of stationarity. Using ARIMA regression, we generated estimates of any effect of the law change on abortion rates at the aggregate country level and we also stratified the analysis by nationality. Data were analysed using SPSS 23 ('SPSS') and Microsoft Excel.

3.4 Findings

3.4.1 Description of the study population (Rates and Trends)

Table 3.1 shows the number and proportion of women resident in Spain, obtaining abortions by year and nationality. Spanish women accounted for approximately 57% of all abortions in 2008. In 2010, the year of the law change, Spanish women accounted for about 61% of abortions and by 2017 this had increased to 66%. Foreign women accounted for a disproportionately high percentage of abortions. Approximately 43% of all abortions in 2008 were obtained by foreign women, but this steadily decreased over the period, to about 34% in 2017. Following Spanish women, those from Latin America and the Caribbean accounted for the second highest proportions of abortions, albeit their proportions decreased over the period, from approximately 25% in 2011 to 17% in 2017. This was followed by women from Eastern Europe and Africa. Women from the EU-West and Global North accounted for the least proportions of abortions, between 2% and 3% over the period examined.

Table 3.1: Number and Proportion of Abortions performed by residents of Spain by Nationality/Origin and Year

Nationality	Year																		
	2008		2009		2010		2011		2012		2013		2014		2015		2016		2017	
	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%
EU-West and Global North	2337	2.1	2275	2.1	2105	1.9	2276	2.0	1911	1.7	1965	1.8	1838	2.0	1955	2.1	2112	2.3	2308	2.5
Eastern Europe	10389	9.1	9148	8.4	9018	8.1	9665	8.3	8777	7.9	8057	7.6	7104	7.6	6908	7.5	6654	7.3	6069	6.6
Asia/Oceana	1693	1.5	1850	1.7	2093	1.9	2601	2.2	2547	2.3	2715	2.5	2629	2.8	2626	2.8	2515	2.8	2326	2.5
LAC	28814	25.3	26003	23.8	24754	22.3	24920	21.4	22901	20.6	21227	19.9	16968	18.2	15937	17.2	15461	16.9	16088	17.4
Africa	6025	5.3	6019	5.5	5877	5.3	6157	5.3	5689	5.1	5362	5.0	4689	5.0	4639	5.0	4515	4.9	4470	4.8
Spain	64414	56.7	64025	58.6	67095	60.5	70987	60.9	69525	62.4	67329	63.1	60029	64.4	60495	65.4	60151	65.8	61118	66.2
Total	113672		109320		110942		116606		111350		106655		93257		92560		91408		92379	

Figures 3.1 and 3.2 show the trends in abortion rates, while Tables 3.2-3.8 (and Figures A3.1-A3.8) show abortion rates per 1000 women 15-49 years, including age-specific abortion rates, and abortion indexes per woman. There was a general increase in the global trends of abortion rates in the pre-intervention period, and a decrease in the post-intervention period, until 2014, when rates started trending back upwards (Figure 3.1). A spike was observed in 2011, one year immediately following the law change, from 9.5 abortions per 1000 women 15-49 years in 2010 to 10.0 abortions in 2011 Following the spike abortion rates started trending downwards, levelling off from about 2014, to rates that were recorded in 2006. The overall rate of abortion increased over the period examined, from approximately 7.0 abortions per 1000 women 15-49 years in 2003, to approximately 8.7 abortions per 1000 women 15-49 years in 2017.

The abortion index also increased, though slightly, from 0.24 abortions per woman in 2003, to 0.33 abortions per woman in 2017 (Table 3.2). The trends of abortion indexes did not deviate from the trends of abortion rates, with minor exceptions (See Figures A3.9-A3.15). Among women from Asia/Oceania, an inconsistent pattern between the abortion rates and the synthetic rates was observed between 2016 and 2017 when the former rate trended downward, and the latter upward. Among women from Latin America and the Caribbean, differences were observed between 2011-2013, wherein the abortion rates trended downwards slightly, but the synthetic rates trended upwards. Among women from Africa, a deviation in the trend between the two rates was observed in between 2015 and 2016. Whereas the abortion rate trended downwards, the synthetic rate trended upwards. Finally, among Spanish women a difference was found between 2015-2016, with a decrease observed in the abortion rate, and an increase in the synthetic rate. Otherwise, the trends in both abortion rates and abortion indexes were consistent with each other.

Figure 3.1: Abortion rates per 1000 women 15-49 years resident in Spain by year
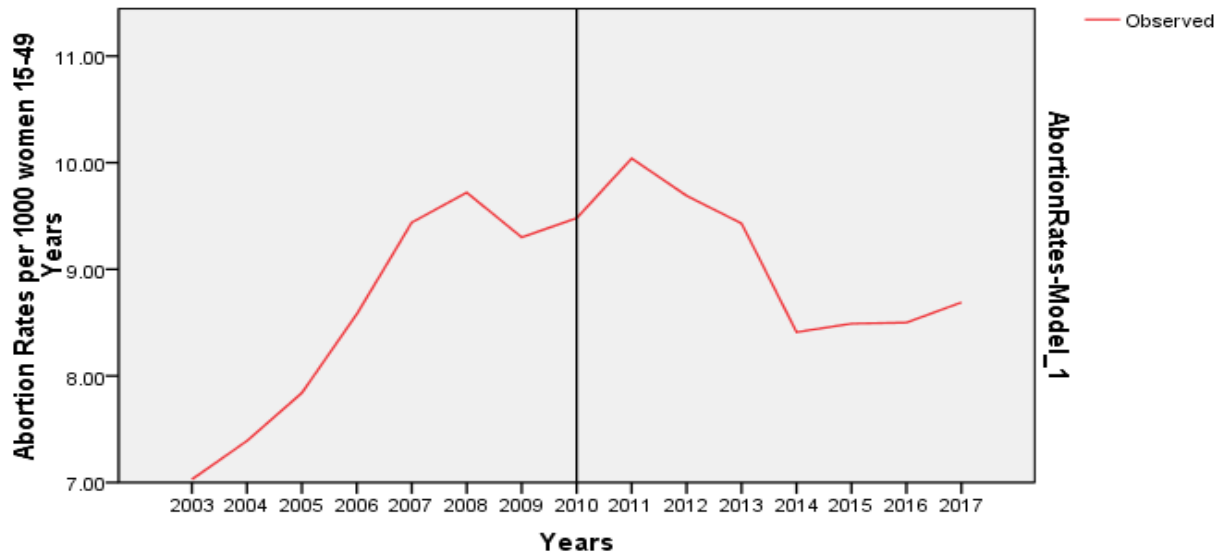
When nationality was contemplated, a decline was observed in the pre-intervention abortion trends among all groups of women, except those from Spain (Figure 3.2). An immediate spike was observed in 2011, that is, immediately following the law change, among all groups of women. The actual change in rates between 2010-2011 ranged from 2% among women from Africa, to 14% among women from Asia/Oceania, while the increase in the global rates was approximately 6%. However, this spike was not sustained, and with the exception of women from the EU-West and Global North for whom an upward trend persisted, a downward trend in abortion rates was generally observed following the 2011 spike, from about 2012 to 2014. This downward trend continued until the end of the period among women from Africa, Asia/Oceania and Eastern Europe, with one minor exception in 2013 among Asian/Oceanic women, and in 2015 among Eastern European women. On the contrary, following 2014, an increase in abortion rates was observed among women from Spain and Latin America and the Caribbean.

Spanish women, except between the years 2010-2013 when women from the EU-West and the Global North had lower abortion rates, recorded the lowest abortion rates, including recording lower rates than the global rates observed in Spain (Table 3.3 and Figure A3.1).

Figure 3.2: Trends in abortion rates by year and nationality
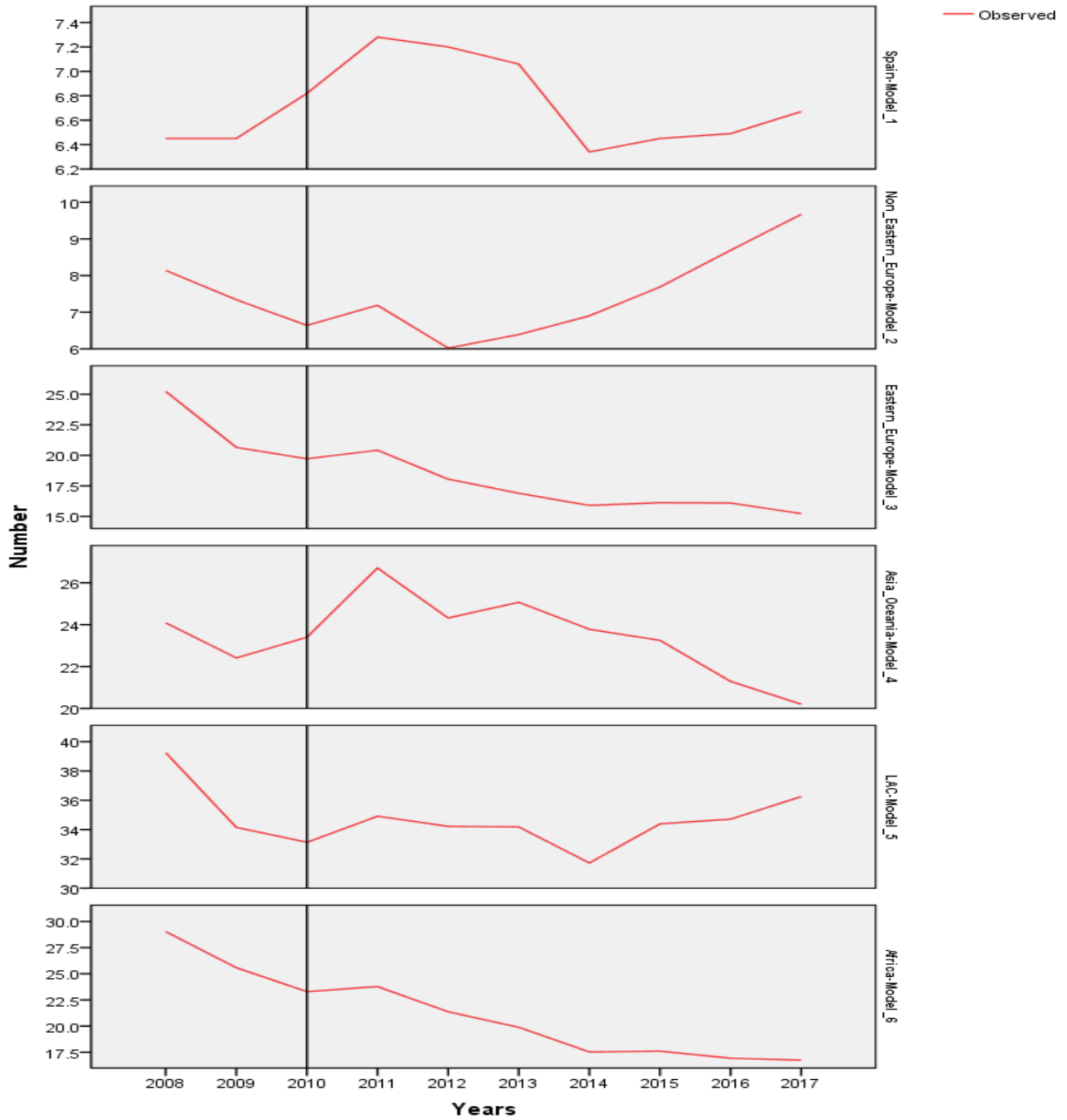
Tables 3.2-3.8: Total and age-specific abortion rates per 1000 women 15-49 and synthetic abortion index per woman by year and nationality

Table 3.2: Total and age-specific abortion rates per 1000 women and abortion index per woman by year -entire sample

Age Groups	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
< 20 years	8.06	8.84	9.37	10.48	11.23	11.26	11.05	11.54	12.92	12.36	11.74	9.64	9.29	8.97	8.85
20-24 years	13.43	14.48	15.47	17.07	19.32	19.71	18.73	18.85	20.09	19.29	18.51	15.83	16.19	16.37	17.17
25-29 years	10.43	10.93	11.98	13.51	15.04	15.92	15.26	15.69	16.71	16.45	15.86	14.50	14.74	15.12	15.68
30-34 years	7.97	8.35	8.83	9.77	10.93	11.56	11.21	11.77	12.70	12.66	12.68	11.69	12.26	12.40	12.80
35-39 years	5.72	5.97	6.39	7.07	7.74	8.09	8.01	8.30	8.91	8.60	8.96	8.40	8.64	8.80	9.07
40- 44 years	2.46	2.63	2.84	2.90	3.25	3.33	3.18	3.37	3.40	3.46	3.49	3.49	3.45	3.48	3.60
>=45 years	0.27	0.25	0.30	0.28	0.34	0.33	0.32	0.31	0.33	0.29	0.32	0.29	0.33	0.34	0.31
Abortion Rate	7.03	7.39	7.84	8.58	9.44	9.72	9.30	9.48	10.04	9.69	9.43	8.41	8.49	8.50	8.69
Abortion Index	0.2418	0.2573	0.2759	0.3054	0.3392	0.3510	0.3388	0.3491	0.3753	0.3655	0.3578	0.3192	0.3245	0.3274	0.3374

Table 3.3: Total and age-specific abortion rates per 1000 women and abortion index per woman by year - Spanish women

Age Groups	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
< 20 years	9.10	9.18	9.66	10.64	10.14	9.50	7.81	7.53	7.46	7.35
20-24 years	13.83	13.91	14.49	15.55	15.33	14.74	12.52	12.90	12.79	13.30
25-29 years	10.06	10.24	11.14	12.08	12.53	12.25	11.27	11.59	12.03	12.44
30-34 years	7.15	7.31	7.98	8.77	9.06	9.22	8.67	9.19	9.43	9.77
35-39 years	5.49	5.65	6.04	6.50	6.34	6.63	6.36	6.49	6.60	6.98
40- 44 years	2.45	2.35	2.56	2.53	2.63	2.68	2.65	2.65	2.69	2.85
>=45 years	0.25	0.24	0.25	0.27	0.23	0.25	0.22	0.27	0.26	0.23
Abortion Rate	6.45	6.45	6.82	7.28	7.20	7.06	6.34	6.45	6.49	6.67
Abortion Index	0.2416	0.2444	0.2607	0.2817	0.2814	0.2764	0.2475	0.2531	0.2563	0.2647

Table 3.4: Total and age-specific abortion rates per 1000 women and abortion index per woman by year -EU-West and Global North women

Age Groups	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
< 20 years	9.48	8.37	6.92	9.06	6.86	6.75	8.91	6.94	7.89	8.46
20-24 years	15.56	14.59	12.21	13.84	11.63	12.96	13.55	14.41	15.46	18.94
25-29 years	11.89	10.46	10.01	10.33	9.53	8.99	9.84	10.75	13.02	13.76
30-34 years	10.38	8.64	8.15	8.46	7.22	8.04	8.08	10.06	11.16	12.75
35-39 years	7.44	7.21	7.11	7.65	6.27	6.99	6.75	8.69	9.47	10.22
40- 44 years	3.57	3.64	2.73	3.35	2.47	2.71	3.89	3.73	4.18	4.11
>=45 years	0.42	0.23	0.41	0.44	0.27	0.36	0.29	0.36	0.54	0.69
Abortion Rate	8.14	7.34	6.64	7.19	6.02	6.39	6.90	7.69	8.69	9.67
Abortion Index	0.2937	0.2657	0.2377	0.2657	0.2212	0.2340	0.2566	0.2747	0.3086	0.3447

Table 3.5: Total and age-specific abortion rates per 1000 women and abortion index per woman by year -Eastern European women

Age Groups	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
< 20 years	26.05	23.03	24.61	25.32	20.42	21.01	18.17	20.29	18.77	19.18
20-24 years	38.98	31.52	30.85	34.85	30.37	30.08	29.65	27.59	31.47	30.54
25-29 years	27.85	23.49	22.84	24.53	22.85	21.97	21.84	22.76	23.38	24.11
30-34 years	27.38	21.77	21.74	21.72	20.31	18.66	17.38	19.03	19.39	18.74
35-39 years	22.94	20.02	17.58	17.94	15.83	15.44	14.92	15.74	15.05	13.65
40- 44 years	11.66	9.07	8.29	7.93	6.93	6.30	6.70	6.70	6.98	6.49
>=45 years	0.96	0.96	0.57	0.75	0.62	0.85	0.66	0.79	0.53	0.52
Abortion Rate	25.24	20.65	19.72	20.42	18.05	16.89	15.90	16.12	16.10	15.23
Abortion Index	0.7791	0.6493	0.6323	0.6652	0.5867	0.5715	0.5466	0.5645	0.5779	0.5662

Table 3.6: Total and age-specific abortion rates per 1000 women and abortion index per woman by year - Asian/Oceanic women

Age Groups	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
< 20 years	10.42	8.67	14.32	18.07	13.58	15.34	11.06	10.63	8.64	8.11
20-24 years	33.88	32.14	30.84	33.16	31.13	26.81	23.57	24.45	22.00	40.05
25-29 years	32.53	29.92	31.47	36.04	32.23	36.18	32.92	32.23	31.37	25.40
30-34 years	33.54	31.73	31.81	37.36	34.84	36.47	34.62	33.90	32.19	30.93
35-39 years	24.17	22.97	24.48	29.61	28.01	30.09	29.76	30.06	27.62	23.72
40- 44 years	12.68	10.91	14.14	14.23	13.34	13.21	15.51	14.94	12.04	12.05
>=45 years	1.64	2.40	0.58	2.04	2.07	1.04	3.21	1.78	1.49	2.07
Abortion Rate	24.09	22.41	23.40	26.71	24.32	25.07	23.78	23.25	21.29	20.20
Abortion Index	0.7443	0.6937	0.7382	0.8525	0.7760	0.7957	0.7532	0.7400	0.6767	0.7116

Table 3.7: Total and age-specific abortion rates per 1000 women and abortion index per woman - Latin American and Caribbean women

Age Groups	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
< 20 years	40.75	36.78	37.39	45.51	49.45	50.80	43.68	47.24	45.33	45.78
20-24 years	66.43	57.74	58.14	62.34	62.65	63.26	59.35	66.25	70.30	74.52
25-29 years	52.69	45.70	44.00	46.34	43.98	43.05	41.81	44.92	45.26	49.05
30-34 years	42.82	37.62	36.90	38.62	37.45	37.42	34.77	38.27	37.72	38.85
35-39 years	30.78	27.67	27.38	29.12	29.01	30.83	28.68	31.69	33.07	33.27
40- 44 years	12.97	11.69	11.97	12.63	13.21	13.64	14.19	14.49	14.73	15.06
>=45 years	1.32	1.21	1.10	1.05	1.03	1.40	1.18	1.28	1.50	1.26
Abortion Rate	39.25	34.15	33.13	34.91	34.22	34.18	31.72	34.39	34.71	36.25
Abortion Index	1.2388	1.0921	1.0844	1.1780	1.1839	1.2019	1.1183	1.2207	1.2395	1.2890

Table 3.8: Total and age-specific abortion rates per 1000 women and abortion index per woman - African women

Age Groups	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
< 20 years	14.18	12.80	12.35	13.92	13.63	12.07	11.30	11.39	10.01	10.15
20-24 years	36.74	31.26	28.12	30.76	27.59	27.25	23.92	26.84	27.24	30.24
25-29 years	43.45	36.14	32.27	32.20	28.26	25.58	21.67	21.81	21.72	21.96
30-34 years	35.66	32.98	30.32	29.98	27.41	25.24	23.09	22.07	20.99	21.07
35-39 years	23.75	21.30	21.50	22.92	21.01	21.17	19.00	18.90	18.48	16.97
40- 44 years	10.87	11.11	9.34	9.36	9.40	8.71	8.55	9.52	8.60	7.89
>=45 years	2.08	2.28	1.01	1.17	1.16	1.24	0.99	1.01	1.49	1.33
Abortion Rate	29.03	25.58	23.29	23.78	21.37	19.89	17.53	17.61	16.93	16.75
Abortion Index	0.8336	0.7393	0.6745	0.7015	0.6422	0.6063	0.5426	0.5577	0.5427	0.5480

Over the entire period examined, among Spanish women, a slight increase in abortion rates, by 3% was observed, from 6.5 abortions per 1000 women 15-49 years in 2008, to 6.7 abortions per 1000 women 15-49 years in 2017. On average, they had 7.0 abortions per 1000 women 15-49 years. The highest abortion rates among these women were observed between 2011 and 2013, ranging between 7.1 abortions per 1000 women 15-49 years (2013), and 7.3 abortions (2011). Following 2013, lower (relative to 2011), but increasing abortion rates, were generally observed among these women.

Following Spanish women, (with the notable exception aforementioned), those from the EU-West and Global North accounted for the lowest abortion rates over the period, with an average of 7.5 abortions per 1000 women 15-49 years (Table 3.4 and Figure 3.1 in Appendix). Rates among these women increased by about 8% in 2011 (to 7.2 abortions per 1000 women 15-49 years), the first full year when the Organic Law 2/2010 was in force. In 2012, the rates declined again, before increasing to 9.7 abortions per 1000 women 15-49 years in 2017, the highest recorded in the period examined. A 17% increase in the likelihood of an abortion over a woman's lifetime was also observed, from 0.29 abortions per woman in 2008, to 0.34 abortions per woman in 2017.

In order of significance, the highest abortion rates were observed among women from Latin America and the Caribbean, with an average of 35 abortions per 1000 women 15-49 years over the period (Table 3.7 and Figure A3.1). The abortion rate among these women was highest in 2008 (39.3 abortions per 1000 women 15-49 years) but declined to 36.5 per 1000 women 15-49 years in 2017. Notwithstanding the decline in the overall rate over the period, these women exhibited an increase in rate by about 5%, between 2010 and 2011. Furthermore, when the synthetic rates were examined, Latin American women were the only group to record abortion rates greater than one (Table 3.7).

Following Latin American women, those from Asia/Oceania had the highest abortion rates (Table 3.6 and Figure A3.1), although up to 2009, these women recorded lower rates than African women. On average, Asian/Oceanic women had 23.5 abortions per 1000 women 15-49 years. There was a decrease in their abortion rates over the period, from 24.1 abortions per 1000 women 15-49 years in 2003, to 20.2 abortions per 1000 women 15-49 years in 2017. In, 2011 when the Organic Law

2/2010 was fully in force, the rate was 26.7 abortions per 1000 women 15-49 years, the highest recorded over the period examined, and which represents a 14% increase from 2010. The synthetic abortion rates among these women, remained relatively steady, at an average of about 0.70 abortions per woman.

African women accounted for the third highest abortion rates, commencing in 2010, with an average of 18.5 abortions per 1000 women 15-49 years (Table 3.8 and Figure A3.1). The abortion rates among these women, declined from 29.0 abortions per 1000 women 15-49 years in 2008, to 16.8 abortions per 1000 women 15-49 years in 2017. Oddly, the temporary increase in the rate around the time of the implementation of the Organic Law 2/2010 was only 2% among Africans. The synthetic rate of abortion among these women also declined significantly over the period, from 0.84 abortions per woman, to 0.56 abortions per woman, representing a 33% decrease.

Finally, Eastern European women accounted for the fourth highest abortion rates, with an average of 19.5 abortions per 1000 women 15-49 years over the period (Table 3.5 and Figure A3.1). These women also experienced a significant decline in their abortion rates over the period examined, from 25.2 abortions per 1000 women 15-49 years in 2008 to 15.2 abortions per 1000 women 15-49 years in 2017, albeit that this decline was temporary halted in 2011 when the rates increased by about 4%. A significant decline in the synthetic abortion rates among these women was also observed, from 0.78 abortions per woman in 2008 to 0.57 abortions per woman in 2017, representing a 27% decrease.

Trends in Age-Specific Abortion Rates
When examined by age group, among all women included in the study (Table 3.2 and Figure A 3.2), women 20-24 years accounted for the highest abortion rates. The abortion rates increased over the period, from 13.4 per 1000 women in 2003, to 17.2 per 1000 women in 2017. The highest rate was observed among these women in 2011: 20.1 abortions per 1000 women. The rates among 25–29-year-old women were also relatively high, ranging from 10.4 per 1000 in 2003, to 16.7 per 1000 in 2011, but ending at 15.7 per 1000 women in 2017. When nationality is contemplated among Spanish women (Table3.3 and Figure A3.3), those 20-24 years accounted for the highest abortion rates, ranging between 13.3 abortions per 1000 women (2017), to 15.6 abortions per 1000

women (2011). However, the abortion rates decreased over the period examined, from 13.8 per 1000 women in 2008, to 13.3 per 1000 women in 2017. The rates among 25–29-year-olds were also relatively high, ranging between 10.1 per 1000 in 2008, and 12.5 per 1000 in 2011, but ending at 12.4 per 1000 women in 2017.

As well, among women from the EU-West and Global North (Table 3.4 and Figure A3.4), women 20-24 years accounted for the highest abortion rates, followed by women 25-29 years. Among women 20-24 years, following a spike in the abortion rates in 2011 (13.8 per 1000), a decline was observed in 2012 (11.6 per 1000 women), followed by an increase to 18.9 abortions per 1000 women, in 2017. Among these women 20-34, the abortion rates increased over the period examined. On the contrary, the abortion rates among women less than 20 years decreased by about 11%, from 9.5 per 1000 women in 2008, to 8.5 per 1000 women in 2017, but generally, the rates fluctuated over the period examined.

Among women from Eastern Europe (Table 3.5 and Figure A3.5), 20–24-year-olds also accounted for the highest rate of abortions. A declining trend in abortion rates was observed among these women, from 39.0 per 1000 in the pre-intervention period starting in 2008 until 2015 (27.5 per 1000), except for a spike in 2011 (34.9 per 1000). Subsequently, the abortion rates started trending back upwards, increasing to 30.5 per 1000 in 2017. Women 25-29 years recorded the second highest abortion rates between 2008-2009 and 2012-2017. Among these women, a declining trend in abortion rates was observed in the pre-intervention period, which continued until 2014 (except for the 2011 spike), following which, the rates started to trend upwards. Among Eastern European women less than 20 years, rates remained fairly stable from 26.1 per 1000 in 2008, to 25.3. in 2011, after which a generally declining trend was observed (19.2 per 1000 in 2017). Among women from Latin America and the Caribbean (Table 3.7 and Figure A3.7), women 20-24 years accounted for the highest abortion rates. The rates trended upwards from 2009 (58.0 per 1000), to 2013 (63.3 per 1000). However, in 2014, there was a slight decline in the rates (59.4 per 1000), followed by a sharp increase to 75.0 per 1000 in 2017. While women 25-29 years accounted for the second highest abortion rates in the pre-intervention period, by 2012, women less than 20 years had higher rates, until 2016. Among these women less than 20 years, abortion rates increased from 37.4 per 1000 in 2010 to 50.1 in 2013, followed by a decline to 45.3 in 2016.

Among women from Africa (Table 3.8 and Figure A3.8), abortion rates generally trended downwards among all age groups. However, among women 20-24 years, from 2014 onwards, an increase in the abortion rates was observed, from 23.9 per 1000 in 2014, to 30.2 in 2017. The highest rates were observed among women 25-29 years, that is up until 2012, following which, the rates were highest among women 20-24 years. Women 20-24 years were the only group to show an increasing trend in abortion rates.

Among women from Asia/Oceania (Table 3.6 and Figure 3.6), those 30-34 years accounted for the highest rates of abortion. The post-intervention rates among these women were generally higher than the pre-intervention rates, except for 2017. Notwithstanding, a generally downward trend in rates were observed. Starting 2010, women 25-29 years accounted for the second highest abortion rates, except for 2017. Although the rates fluctuated over the period among these women, a generally downward trend was observed. Women 20-24 years, while generally showing a downward trend in abortion rates in the post-intervention period, accounted for a significant increase in abortion rates starting in 2016. The rate increased from 22.0 per 1000 in 2016 to 40.2 per 1000 in 2017, the highest rate observed among women from Asia/Oceania.

3.4.2 Impact of the law change on abortion rates
Table 3.9 shows the mean rates of abortions and the corresponding percentage changes for the pre-intervention and post-intervention periods. The law change was found to coincide with an increase in the global mean abortion rates, by approximately 0.24 points, representing a 3% increase. The increasing pattern however does not remain consistent when nationality is contemplated. A decline in mean abortion rates between the two periods was observed among women from Africa, Eastern Europe and Latin America and the Caribbean. The sharpest decline in abortion rates occurred among African women, by approximately 6.8 points, representing a 26% decline between the two periods. This was followed by Eastern European women who recorded a 22% percent decline in abortion rates between the two periods, while Latin Americans recorded a 3% decline. On the contrary, Spanish women recorded a 3% increase in abortion rates over the period while women from the EU-West and Global North and Asia/Oceania recorded a 1% increase in abortion rates between the two periods.

81

Table 3.9: Mean Difference and Percentage Change in Abortion Rates by Nationality (Pre and Post Law Change)

Nationality	Mean Abortion Rate (pre)	95% CI	Mean Abortion Rate (post)	95% CI	Difference in Means	Percentage Change
All	8.8	7.7-9.5	9.0	8.4-9.7	0.2	2.3
Spanish	6.6	6.0-7.1	6.8	6.4-7.1	0.2	3.0
EU-West and Global North	7.4	5.5-9.2	7.5	6.3-8.7	0.1	1.4
Eastern Europe	21.9	14.5-29.2	17	15.3-18.6	-4.9	-22.4
Asia/Oceania	23.3	21.2-25.4	23.5	21.5-25.6	0.2	0.9
LAC	35.5	27.4-43-7	34.3	33.1-35.6	-1.2	-3.4
Africa	26	18.8-33.1	19.1	16.7-21.6	-6.9	-26.5

CI: Confidence Interval

The results of the ARIMA estimates are shown in Table 3.10. The model estimates a positive effect of the law change on overall abortion rates; however, this was not found to be statistically significant. When nationality was contemplated, in all cases a positive effect of the law change was estimated. However, only in the case of women from Asia/Oceania did the models estimate a statistically significant association between the law reform and abortion rates. The estimates from our models suggest that the increase in abortion rates related to the law change was approximately 4.2 points annually among Asian/Oceanic women (4.210; p=0.014).

Table 3.10: Average change per year in abortion rates by nationality (2008-2017) and the entire population (2003 - 2017) based on ARIMA models

Model Component	Model	Nationality	Estimate	t-value	p-value	R^2
Level Effect 2017	(0,1,0)	Entire Population ~	0.475	0.903	0.384	0.064
	(0,1,0)	Non-Eastern Europe~	0.427	0.461	0.659	0.029
	(0,1,0)	Eastern Europe ~	2.039	1.258	0.249	0.184
	(0,0,0)	Asia/Oceania	4.210	3.230	0.014*	0.598
	(0,0,0)	Latin America and the Caribbean	2.377	0.934	0.381	0.111
	(0,1,0)	Africa ~	2.086	1.581	0.158	0.263
	(0,0,0)	Spain	0.490	1.440	0.193	0.229

*p<0.05

82

3.5 Discussion

The changing legal framework in Spain regarding abortions, with the introduction of Organic Law 2/2010, provided an opportunity to assess the impact of more liberal abortion laws on abortion rates. Following the reform, some groups have raised concerns that the legislative development may lead to increased abortions notwithstanding available evidence to the contrary, and in the absence of objective measurements justifying these concerns. However, these concerns are consistent with the polarized debates globally regarding the impact of abortion related legislative changes on trends of abortions rates. To add to the sparse literature addressing this issue in the context of Spain, we assessed the trends of abortions rates over a 14-year period from 2003-2017 to determine objectively, the impact of the reform on these rates. We found that the law was consistent with changes in abortion rates and trends, but that not all changes were statistically significant.

We found substantial differences in the trends of abortion rates across different nationalities and across different age groups. This is consistent with one US study which has attributed variations in abortion rates to different demographic bases (Wetstein, 1995). For starters, consistent with a previous international study which assessed global abortion rates (Singh et al., 2018), we found that among all groups of women except, Asians/Oceanics, the bulk of abortions were accounted for by women in their twenties. Among Asian/Oceanic women however, abortion rates were highest among women 30-34 years. Notably however, among the different groups of women, the contributions of different age groups to the overall trends differed, which suggests different level of access to abortions based on age groups and different factors driving the abortion process underpinned by age. The most important finding in this regard relates to women less than 20 years.

Among women from Asia/Oceania, Spain, and to a lesser extent Africa, a notable decrease in the abortion rates among < 20-year-olds was observed, starting in 2013. In addition, among women in the same age group from Latin America and the Caribbean, an increase in the rates was observed from 2010 until 2013, following which, the rates decreased before levelling off. It is suggested that these findings are likely attributable to the discussions about proposed legislative changes, and the later amendment in 2015, of Organic Law 2/2010, which now required parental consent for teenagers less than 16 years to obtain an abortion. On the contrary, among women from the EU-

West and Global North, women less than 20 years had an increase in abortion rates in 2014, followed by a decline in 2015 before increasing for the rest of the period. Among Eastern Europeans, the trends remained relatively steady. It is likely that the different patterns observed among women less than 20 years from the EU-West and Global North, is associated with their higher income status, which fosters greater access to private health centers in performing abortions. Accordingly, they were not as severely affected by the development in the laws as compared with women less than 20 years from other nationalities. However, further research is implicated in helping to explain these findings.

Relative to nationality differentials, several other important findings were made, besides the impact of age on overall abortion rates. Firstly, consistent with the literature (Ostrach, 2012; Zurriaga et al. 2009; Gispert et al., 2018), we found that migrant women accounted for a disproportionately high percentage of all abortions performed in Spain, although the proportions decreased over the period from 2008-2017, with a lower percentage of migrants in the post-intervention period obtaining an abortion. Plausibly, this decrease could be attributable to the decreasing number of migrant women of reproductive ages in Spain, particularly in the post-intervention (2011-2017) period (Ostrach, 2012). However, such an interpretation must be considered with caution as the number of foreign women in Spain in the reproductive ages did not start to decline until 2011, while the declining proportion of abortions accounted for by migrant women were observed as early as 2009, from 44% in 2008 to 40% in 2010 (See Table 3.1).

Secondly, in examining nationality differentials, we found relatively low abortion rates on one end of the spectrum and relatively high rates on the other end. One international study has also found similar outcomes of low and high abortion rates co-existing in countries where immigration is high (Singh et al. 2018). This is due to the high number of, and variation among, migrant women participating in abortion practices and whose interaction with the health care system appears to differ based on social, legal, and other factors which creates barriers for some, while others have greater accessibility, as will be explicated later in the discussion. As well, one Spanish study has explained variations in unintended pregnancies and use of contraception (including incorrect use or ineffective means) as factors likely to explain these differentials (Gispert et al., 2008).

Thirdly, we found that as compared with Spanish women, migrants generally had higher abortion rates, although between 2010-2013, women from the EU-West and Global North had lower rates. This includes higher rates in all age groups. In this regard, abortion rates were found to be highest among women from Latin America and the Caribbean, who were also the only group found to have a synthetic abortion rate greater than one, indicating that these women will generally have more than one abortion in their lifetime. Among all other groups of women, a synthetic abortion rate of less than one was found, suggesting that these women will have less than one abortion in their lifetime. Following women from Latin America and the Caribbean, in order of significance, the highest abortion rates were found among women from Asia/Oceania, Africa and Eastern Europe. Relative to other migrant women, abortion rates were lowest among women from the EU-West and Global North. These findings are consistent with and support previous literature, which have found higher abortion rates among migrants, especially Latin Americans and Northern Africans, but lower rates among North Americans. (Bearak et al. 2020 ; Singh et al. 2018; Sedgh et al., 2016; Zurriaga et al. 2009; Pérez et al., 2014). Such findings have been partly explained in the literature as being due to migrant women being statistically more likely to have children as compared with native women (Gispert et al., 2008; Ostrach, 2012).

As well, it signals unequal access to family planning services and use. In fact, in chapter four, we found that a greater proportion of women from Africa, Eastern Europe and Asia/Oceania who obtained abortions, were non-contraceptive users. On the contrary, the lower rates observed among women from the EU-West and Global North is not in keeping with previous literature which has generally found higher abortion rates among migrants (Ruiz-Ramos et al., 2012; Ferrer, 2012). It is likely that such findings are attributable to the high socio-economic status of women from this region. One study has found that Western Europeans have a higher social status than Spanish women and has suggested that differences in abortion performance between different groups is related to socio-economic status, with lower social status being associated with a higher risk of an abortion (Zurriaga et al. 2009). Accordingly, higher social status may implicate lower abortion rates, although that is not always the case. As will be seen in chapter four, and as previously indicated, Latin Americans have good social status, yet they have high abortion rates. It appears therefore that there are a set of different factors which drives abortion rates and the interplay between these factors seemingly manifests and operate differently among different groups, to yield

varying results. Notwithstanding these general observations, important variations were observed when the pre-intervention and post-intervention comparisons were contemplated as will be discussed later.

When we modelled the level effect of the law change (that is, the size of the effect of the law on abortion outcomes), the law reform did not show any statistically significant impact on the global abortion rates. An earlier Spanish study also failed to find a significant association between the introduction of a more liberal abortion law and an increase abortion rates (Piero, 2001). Noteworthy, the abortion law contemplated in that study was based on Spain's 1985 abortion laws, where abortions were only available for medical reasons and rape, but not at the request of the woman. In addition, the measurement used to test the intervention effect in that study was a trend change (that is, a change in slope). As well, one international study which undertook a global assessment of, among other things, the impact of laws on abortion rates, found that abortion rates were higher in countries where abortions were restricted and found no evidence to suggest that it was lower in such settings. (Bearak et al. 2020). Another United States study had a similar finding, albeit that study focused on policy changes made in response to the now overturned common law ruling of *Roe v. Wade,* which had decriminalised abortions in the United States (Wetstein, 1995). On the contrary, our findings are inconsistent with the results of one study which assessed the impact of legislation on abortion rates in Eastern Europe and found significantly lower rates of abortions in countries and/or years with less restrictive abortion laws (Levine and Staiger, 2004), and a United States study which found similar results (Brown et al., 2020). The mixed results in the literature suggest that the impact of abortion laws on abortion rates, is not generalizable. We found support for such conclusion in our own analysis when nationality was contemplated, wherein significant associations were observed among at least one group of women and not others.

We found that the pre-intervention abortion rates in the global population generally trended upwards, whilst the post-intervention rates trended downwards. However, once the data was disaggregated by nationality, we found important variations in the pre-intervention and post-intervention trends. To begin with, we found that the upward trends in abortion rates observed in the pre-intervention period were mainly attributable to Spanish women, being the only group of women for whom an upward trend was observed in that period. Plausibly, this finding is due to a

combination of the effects of the 2008 economic crisis and threatened cuts to public services for migrants (including threats to universal healthcare) and the uncertainties and lack of awareness flowing from such economic and political climate (Ostrach 2012; Ostrach 2020) in the pre-intervention period.

In the post-intervention period, immediately following the law change in 2011, there was a universal spike in abortion rates observed across all nationalities ranging between 2-14 %, but it was short-lived. It is suggested that this was a shock immediate effect of the law change and should not be interpreted as the sum total of the effects of the law. One study has noted that internationally, number of abortions have been found to increase subsequent to decriminalization but stabilizes afterwards (Peiro, 2001). In fact, following the 2011 spike, global abortion rates showed a declining trend, notwithstanding a 2% increase in abortion rates in the post-intervention period, relative to the pre-intervention period. In addition, among all migrant women, except those from the EU-West and the Global North, a declining trend in abortion rates was observed. It has been put forward in the literature that the downward trends of abortion rates among migrants in Spain are likely due to a combination of lower migration rates, increased utilization of expanded family planning programs and improved emergency contraception availability that accompanied the legal reform (Ostrach, 2012). While these could be plausible reasons, and indeed with more time in Spain migrants' contraceptive practices may have improved and would likely help to explain the decrease in number of abortions, there are several issues triggered. The explanation about migration rates disregards the fact that abortion rates control for population size. As well, these suggestions do not appear to be based on any empirical evidence. Finally, these postulations treat migrants as a homogeneous group and fail to account for, or to explain, the non-uniformity in the trends of abortion rates observed across the different categories of migrants.

We found for example that whilst African and Eastern European women had consistent decreasing trends in abortion rates in the post-intervention period, resulting in a 26% and 22% percent decline in abortion rates respectively, women from the EU-West and Global North had consistent upward trends beginning in 2012, resulting in a one percent increase in abortion rates over the period. Whilst declining trends of abortion rates were observed in the post-intervention period among women from Asia/Oceania, in addition to African and Eastern European women, unlike these

women whose abortion rates remained at or below pre-intervention levels, the post-intervention abortion rates among Asian/Oceanic women were generally higher than pre-intervention rates, except for 2016 and 2017. This resulted in a one percent increase in the abortion rates among Asian/Oceanic women in the post-intervention period, notwithstanding the decreasing trends in rates observed in the post-intervention period among these women.

Meanwhile, trends in abortion rates (as distinct from absolute abortion rates) among Latin American women was more similar to Spanish women than to their migrant counterparts, trending downward up to 2014 before climbing from 2015 onwards. That is, unlike African and European women, the declining trends in abortion rates among women from Latin America and the Caribbean did not remain constant. Finally, the results of our models suggest that among women from Asia/Oceania, the higher abortion rates in the post-intervention period, relative to the pre-intervention period were significantly related to the law reform. Yet, our ARIMA models did not find any significant impact of the law on abortion rates among any other groups of migrants, or Spanish nationals, once the global trend was controlled for. We suggest that these variations in trends and outcomes of abortion rates based on nationality, are likely attributable to other factors external to the law also having an impact on abortion rates. Moreover, it is less likely that these changes are attributable to a change in the age-structure of the population, as the trends of abortion indexes did not deviate from the trends of annual abortion rates, with minor exceptions. Accordingly, any change in the age structure of the population had only a minor effect on the overall abortion rate.

Other plausible explanations are therefore implicated for the variations in the trends of abortion rates observed among different migrant women. On the one hand, it is suggested that the stronger decrease in abortion rates observed among African and Eastern European women, as compared with other groups of women, is likely due to social inequalities and greater barriers to access. One study carried out in Denmark which also found a stronger decrease in the rates of abortion among some migrant groups of women relative to Danes, has noted the relevance of social factors and social vulnerability in explaining the differences observed in that setting (Knudsen, Rasch, and Gammeltoft, 2006). Indeed, the literature is replete with studies highlighting the existence of barriers to access to abortion, even within a liberal regulatory framework (Ostrach, 2012; Ostrach

2020; Pellico-Lopez et al., 2022). These barriers are not uniformed across migrant groups and are dependent on socio-economic status. Latin Americans for example, do not face the same type of language barriers as do Eastern Europeans and Africans, and they have been found, along with Spanish and Western European women, to have higher social levels (Zurriaga et al. 2009; Ostrach, 2012). In addition, as one author has aptly suggested, Latin Americans have greater linguistic proximity which adds to them having fewer barriers than migrants from other origins. In that study, Latin Americans were found to have a greater propensity to develop a sense of belonging in Spain and it was concluded that their lower institutional and cultural-linguistic barriers facilitate a greater integration into the society (Lobera, 2021). These findings in the literature likely explain why their abortion trends are similar to Spanish women and why the rates are trending back upwards in a manner that is similar to Spanish nationals and women from the EU-West and Global North, and dissimilar to their African and Eastern European counterparts. In fact, in chapter four we that Latin America and the Caribbean women obtaining an abortion have a very similar profile to that of Spanish women, with a greater proportion single, employed, using contraceptives. However, a greater proportion of Latin American women had children, which likely, in part, could help explain the higher abortion rates among these women. Indeed, we also found in chapter four, a greater likelihood of abortion among those women with children. Indeed, sociodemographic profile has been found to be highly correlated with the risk of abortion (Gispert et al., 2018).

Moreover, Royal Decree 16/2012 (RDL 16/2012) which disentitled mostly undocumented migrants from access to universal primary healthcare and which also generally tied health care access to social security entitlements, may have led to lower participation of migrants in the healthcare system generally and may help to explain the general decreasing rates among migrants. However, this explanation is particularly helpful in aiding our understanding of the consistent downward trend observed among African and Eastern European women. Africans in particular, are potentially more likely to be in an irregular migrant situation and to have poorer social outcomes as compared with other migrant groups (Zurriaga et al. 2009; Ostrach, 2012). Studies have suggested that notwithstanding paramountcy of Organic Law 2010 over RDL 16/2012, and the requirement that abortion services be made available to women irrespective of their migration status, migrants' access to abortions were restricted by RDL 16/2012 (www.womenslikworldwide.org, 2019; Ostrach, 2012). It has been postulated in the literature that

RDL 16/2012 created barriers to access to sexual and reproductive health services, including prenatal care and abortion, for migrant women in an irregular situation. (www.womenslikworldwide.org, 2019). Accordingly, it is suggested that these migrants face greater barriers to access to health care as compared with other groups of women. Other studies have pointed to social inequalities as accounting for differentials in abortion patterns.

Like other findings elucidated in this study, the literature does not provide much guidance to aid our understanding of why abortion rates trended upwards for women from the EU-West and Global North but no other women, and why the law reform significantly impacted women from Asia/Oceania but no other women. Further research in therefore required, but we suggest, that the increases in abortion trends in the post-intervention period observed among women from the EU-West and Global North is likely explained by their higher socio-economic status which results in greater access to abortion services. As one author notes, inequality in access to abortion services is brought about by socio-economic levels (Peiro, 2001). Among women from Asia/Oceania, it is suggested that the significant and positive impact of the reform may be due to previous unmet need for contraception among these women, particularly 20-24 years old for whom a substantial increase in abortion rates was observed in 2017. Notwithstanding these suggestions, further factors could be implicated but more research is required to help explain the findings.

The Abortion Paradox
Finally, contrary to another study which found abortion to be rising more in women of poor socio-economic situations (although that study did not contemplate nationality as a variable) (Perez et al., 2010), we found rates were rising moreso among those from higher income countries. Our findings therefore point to an 'abortion paradox' of sorts among migrant women. On the one hand, the literature is replete with studies documenting barriers to access to abortion care among migrant women in Spain, especially those most vulnerable from Africa and Eastern Europe (Zurriaga et al. 2009; Ruiz-Ramos, 2012; Rodriguez-Alvarez et al, 2016; Hernandez-Quevedo and Jimenez-Rubio, 2009; Carmona and Alcazar 2014). Yet, amidst these barriers, these most vulnerable migrants have the highest abortion rates, but also the highest percentage decline in abortion rates. Conversely, Spanish women and those from the EU-West and Global North (who have the lowest abortion rates overall) were found to have had higher rates of abortions in the post-intervention

period, relative to the pre-intervention period. It is evident from our findings that when migrant differentials are contemplated, a greater level of complexity is triggered which leads to variances in the trends of abortion rates among migrants. In this regard, there appears to be an intersectionality between socio-economic, cultural, geographic and other factors affecting abortion rates in addition to, or separate from, the legislation which interact to create barriers to access for, and lead to discrimination against some migrant groups (Ostrach 2012; Ostrach 2020; Pellico-Lopez et al., 2022). Accordingly, notwithstanding the presence of a more liberal regulatory abortion framework which governs all women in Spain, women's interaction with the health care system is not a uniformed one and some groups of women face more barriers than others, suggesting that liberal laws as a stand-alone factor, do not translate into more or better access for all groups of migrants. Therefore, laws alone will not account for higher or lower rates of abortions.

Accordingly, although the right to health agenda espoused in international and regional (European) law does contemplate a decrease in the number of abortions, as have been put forward by those who object to the law reform on basis of a fear of increased abortions, it is instructive that this goal must be consistent with and cannot contravene the right of women to have safe and legal abortions. In fact, under the new sustainable development goals (SDGs) focussed on health and gender equality, the advancement of women's access to safe and legal abortion has been deemed a priority for women's reproductive health and rights (IPAS Fact Sheet, 2015). In keeping with international and regional consensus, countries must aim to strike the right balance between reducing recourse to abortions through effective family planning methods, without restricting women's right over the number and spacing of their children, including by way of access to safe and legal abortions. As has been put forward by the European Parliament approved Resolution 2001/2128 on sexual and reproductive health, the goal of reduced abortions is best achieved where states combine liberal legislation on abortions with effective family planning, to include without limitation, sex education and access to contraceptives (Van Lancker, 2015). Therefore, the stronger decrease in abortions observed among African and Eastern European women elucidated in this study, must be interpreted with caution in framing policy interventions in the absence of scholarly research to contribute to our understanding of the true reasons for the decline; that is, whether it is due to barriers to access or improvements in family planning services or a hybrid of these outcomes.

Two things can be true – firstly, it is likely that the suggestions of improved family planning and contraceptive methods help to explain the declining rates among these migrants. In fact, the reform itself has been described as laying the groundwork for improved access to sexual and reproductive health services (Ostrach 2012; Pellico-Lopez et al., 2022). However, while one study has attributed the declining abortion trends to lower migration rates and improved family planning programs, including emergency contraception, these explanations were based on reports from 'local women's health advocates' (Ostrach, 2012). It does not appear as if scholarly research has yet confirmed these postulations, let alone contextualize them based on nationality.

Secondly, it is also likely that greater barriers to abortion among these women help to explain the declining rates, as discussed earlier. The true reasons for the trends observed, must be disentangled, supported by empirical evidence to ensure that the right policy-interventions are developed and appropriately targeted whether to prevent unwanted pregnancies or to better serve women who require abortions. In a similar vein, more studies are required to aid our understanding of the greater, relative to other migrant women, and significant increases observed among Asian/Oceanic women and those from the EU-West and Global North.

3.6 Limitations

This study has several limitations. Abortion data was unavailable by nationality for the period 2003-2007. Accordingly, two sets of time series were used in the analysis – one for the entire population (2003-2017) and one based on nationality (2008-2017). Secondly, the pre-intervention data points were limited to 3 periods including 2010, the year of the law change. Best practice for an ARIMA model suggests at least 3 data points before and after the intervention, inclusive. Although we had three data points, it is noteworthy that the law came into effect on July 5, 2010, and therefore strictly speaking, the intervention should have been measured from that time. To address this issue, we first determined the abortion rates for the pre-2010 intervention period and the post-2010 intervention period. It was observed that the post-2010 intervention rates were lower than the pre-2010 intervention and on this basis, we treated the entire 2010 rate as akin to pre-intervention rates. Additionally, it is possible that at least with respect to 2014, proposed legislative changes to abortion laws could have also impacted abortion rates resulting in confounders in the data. However, a chow test was performed to determine if there were any structural breaks in the

post-intervention period data and none was found. It is still likely that other confounders may have affected our results. In addition, although regional/nationality differentials were contemplated, it is still likely that important variations were masked due to the very broad nationality groupings included in our study. Finally, there are different ways to estimate the effect of an intervention on health outcomes, and very little guidance is provided as to which method is the most appropriate. In this study we used level effects, as defined in our methodology section, but it is likely that measurements solely based on a change is slope could yield different results.

3.7 Conclusion

We used descriptive statistics and ARIMA times series modelling to demonstrate the impact of Organic Law 2/2010 on abortion rates and trends. We found substantial differences in the trends of abortion rates across different groups of women and across different age-groups, suggesting inequality between nationalities and among women in different ages in their ability to access abortion and meet their reproductive goals. We found that in the pre-intervention period, there was an overall upward trend in abortion rates, but this was mainly attributable to Spanish nationals. In fact, broken down by nationality, a declining trend was observed among all groups of migrants. Comparatively, in the post-intervention period, following a spike in 2011 which was observed among all migrant groups, declining trends in abortion rates were generally observed except among women from the EU-West and Global North. Noteworthy, by 2014 the trends started ticking back upwards among Latin American and Spanish women. The strongest decreases in abortion rates were observed among African and Eastern European women but these were not statistically significant. On the contrary, the law change was found to be associated with statistically significant increases in abortion rates among Asian/Oceanic women albeit declining trends were observed among these women in the post-intervention period. However, among all other group of women, as well as relative to the global study population, we found that the law change did not significantly alter abortion rates in Spain. Further, we found that among 20-year-olds, there was generally a decline in abortion rates starting as earlier as 2014, which is likely attributable to the amendment to Organic Law 2/2010, but further studies are required to test whether any statistically significant association exist. This was not the case however among women less than 20 years from the EU-West and Global North.

Our findings contradict sweeping generalizations that the law change would lead to a significant impact on abortion rates, let alone an increase in these rates. Undoubtedly, there are some effects of the law reform on abortion trends. The reform was consistent with an immediate spike in the rates among all women and an increase in the mean rates in the post-intervention period in the overall population, and among women from Spain, EU-West and Global North and Asia. Moreover, though among women from Latin America and the Caribbean, Asia/Oceania and Africa pre-post comparisons revealed a decrease in mean rates over the two periods, and despite clear downward trends in abortions (except among women from the EU-West and Global North), our models estimated an increase in abortion rates, albeit only statistically significant among women from Asia/Oceania. This suggests that the law reform coincides with changes in abortion outcomes. Notwithstanding the aforementioned however, the evidence fails to suggest that over the entire period from 2011-2017, any impact of the law change is sufficient to ground a claim of a significant increase in abortion rates, except for among women from Asia/Oceania. Moreover, even among these women, decreasing trends have been observed after the law change and therefore it remains to be seen if with time, a significant association will still be observed. In fact, previous work has noted stabilization of abortion rates over time, after decriminalization intervention (Peiro, 2001; Koonin et al., 1992).

This study expands the literature in two main ways: a) it provides an evaluation of the impact of liberal abortion laws on abortion trends within the context of Spain using pre-post comparisons and multi-level modelling; and b) it provides critical nationality/regional differentials on the impact of law changes on abortion rates and trends. Our findings point to important nationality differentials in understanding the impact of laws on abortion rates, as at least among one group, a statistically significant association was found. These findings illustrate inequality in abortion rates and access. However, we found that a dearth of studies exists to assist in our understanding of some of the abortion trends observed, particularly the substantial variations across migrant groups elucidated in this study. Notwithstanding, the variations in trends of rates found once nationality was contemplated, reinforces that laws do not operate in silo and cannot unilaterally and universally be used to determine what rates of abortions of trends of abortion rates will be. The findings of this study implicate other social, cultural, political, geographic and economic factors in shaping our understanding of what factors affect abortion rates. It is imperative therefore that

further studies be conducted to better explain our results and to ensure that intervention policies are appropriately targeted.

References

Aborto. España: las claves de la polémica [Abortion. Spain: the keys to the controversy]. (1983). *Revista De Enfermeria (Barcelona, Spain)*, [online] 6(58-59), pp.34–35. Available at: https://pubmed.ncbi.nlm.nih.gov/6554009/ [Accessed 8 Dec. 2022].

Anne VAN LANCKER (2015). *Report on sexual and reproductive health and rights - Committee on Women's Rights and Equal Opportunities | A5-0223/2002 | European Parliament*. [online] Europa.eu. Available at: https://www.europarl.europa.eu/doceo/document/A-5-2002-0223_EN.html [Accessed 8 Dec. 2022].
Arisi, E. (2003). Changing attitudes towards abortion in Europe. *The European Journal of Contraception & Reproductive Health Care*, 8(2), pp.109–121. doi:10.1080/ejc.8.2.109.121.

Association for Improvements in Maternity Services, Ireland (2018). *Calculating abortion rates: why and how – AIMSI /*. [online] Available at: http://aimsireland.ie/calculating-abortion-rates-why-and-how-aimsi/.

Bearak, J., Popinchalk, A., Ganatra, B., Moller, A.-B., Tunçalp, Ö., Beavin, C., Kwok, L. and Alkema, L. (2020). Unintended pregnancy and abortion by income, region, and the legal status of abortion: estimates from a comprehensive model for 1990–2019. *The Lancet Global Health*, [online] 8(9). doi:10.1016/S2214-109X(20)30315-6.

Brown, B.P., Hebert, L.E., Gilliam, M. and Kaestner, R. (2020). Association of Highly Restrictive State Abortion Policies With Abortion Rates, 2000-2014. *JAMA Network Open*, 3(11), p.e2024610. doi:10.1001/jamanetworkopen.2020.24610.

Carmona, R., Alcázar-Alcázar, R., Sarria-Santamera, A. and Regidor, E. (2014). Use of health services for immigrants and native population: a systematic review. *Revista espanola de salud publica*, [online] 88(1), pp.135–55. doi:10.4321/S1135-57272014000100009.

CEDAW 61th Session United Nations (2014). *Civil Society Shadow Report Spain 2008-2013*.
Center For Reproductive Rights (2004). *Safe and Legal Abortion is a Woman's Human Right*. [online] Available at: https://www.reproductiverights.org/sites/default/files/documents/pub_bp_safeandlegal.pdf.
Center For Reproductive Rights (2008). *Safe and Legal Abortion is a Woman's Human Right*. [online] Available at: https://reproductiverights.org/wp-content/uploads/2018/08/Safe-and-Legal-Abortion-is-a-Womans-Human-Right.pdf.

Data for Impact (n.d.). *Abortions per 1,000 women of reproductive age – DataForImpactProject*. [online] Data for impact. Available at: https://www.data4impactproject.org/prh/womens-health/postabortion-care/abortions-per-1000-women-of-reproductive-age/ [Accessed 9 Dec. 2022].

Ferrer, L (2012). Lògiques socials i decisions individuals de la interrupció voluntària del l'embaràs: espanya a través d'una perspectiva comparada. Centre d'Estudis Demogràfics, Universitat Autònoma de Barcelona

Font-Ribera, L., Pérez, G., Salvador, J. and Borrell, C. (2007). Socioeconomic Inequalities in Unintended Pregnancy and Abortion Decision. *Journal of Urban Health*, [online] 85(1), pp.125–135. doi:10.1007/s11524-007-9233-z.

Ganatra, B., Gerdts, C., Rossier, C., Johnson, B.R., Tunçalp, Ö., Assifi, A., Sedgh, G., Singh, S., Bankole, A., Popinchalk, A., Bearak, J., Kang, Z. and Alkema, L. (2017). Global, regional, and subregional classification of abortions by safety, 2010–14: estimates from a Bayesian hierarchical model. *The Lancet*, 390(10110), pp.2372–2381. doi:10.1016/s0140-6736(17)31794-4.

Gispert Magarolas, R., Clot-Razquin, G., Torné, M. del M., Bosser-Giralt, R. and Freitas-Ramírez, A. (2008). Diferencias en el perfil reproductivo de mujeres autóctonas e inmigrantes residentes en Cataluña. *Gaceta Sanitaria*, [online] 22(6), pp.574–577. Available at: https://scielo.isciii.es/scielo.php?script=sci_arttext&pid=S0213-91112008000600011 [Accessed 17 Dec. 2022].

Pérez, G., Ruiz-Muñoz, D., Gotsens M., Casals Cases M., Rodríguez-Sanz M., Social and economic inequalities in induced abortion in Spain as a function of individual and contextual factors, *European Journal of Public Health*, Volume 24, Issue 1, February 2014, Pages 162–169, https://doi.org/10.1093/eurpub/ckt104

Hernández Quevedo, C. and Jiménez Rubio, D. (2009). Las diferencias socioeconómicas en salud entre la población española y extranjera en España: evidencia de la Encuesta Nacional de Salud. *Gaceta Sanitaria*, 23, pp.47–52. doi:10.1016/j.gaceta.2009.07.009.

Hernando Rovirola, C., Ortiz-Barreda, G., Galán Montemayor, J.C., Sabidó Espin, M. and Casabona Barbarà, J. (2014). Infección VIH/Sida y otras infecciones de transmisión sexual en la población inmigrante en España: revisión bibliográfica. *Revista Española de Salud Pública*, 88(6), pp.763–781. doi:10.4321/s1135-57272014000600009.

Hudson, J., Fielding, S. and Ramsay, C.R. (2019). Methodology and reporting characteristics of studies using interrupted time series design in healthcare. *BMC Medical Research Methodology*, 19(1). doi:10.1186/s12874-019-0777-x.

Hyndman, R. and Kostenko, A.V. (2007). Minimum Sample Size requirements for Seasonal Forecasting Models. *Foresight: The International Journal of Applied Forecasting*, [online] 6(6), pp.12–15. Available at: https://econpapers.repec.org/article/forijafaa/y_3a2007_3ai_3a6_3ap_3a12-15.htm [Accessed 8 Dec. 2022].

IPAS (2015). *Women's access to safe abortion in the 2030 Agenda for Sustainable Development: Advancing maternal health, gender equality, and reproductive right*. [online] Available at: http://www.redaas.org.ar/archivos-recursos/2030%20agenda%20and%20women%20access%20to%20safe%20abortion%20-%20Ipas%20%20fact%20sheet%20-%20%202015.pdf.

Jatlaoui, T.C., Shah, J., Mandel, M.G., Krashin, J.W., Suchdev, D.B., Jamieson, D.J. and Pazol, K. (2017). Abortion Surveillance — United States, 2014. *MMWR. Surveillance Summaries*, 66(24), pp.1–48. doi:10.15585/mmwr.ss6624a1.

Keygnaert, I., Guieu, A., Ooms, G., Vettenburg, N., Temmerman, M. and Roelens, K. (2014). Sexual and reproductive health of migrants: Does the EU care? *Health Policy*, [online] 114(2-3), pp.215–225. doi:10.1016/j.healthpol.2013.10.007.

Knudsen, L.B., Rasch, V. and Gammeltoft, T. (2006). Recourse to induced abortion among native and foreign women in Denmark: A Study of Social Vulnerability and the choice of Induced Abortion. *vbn.aau.dk*. [online] Available at: https://vbn.aau.dk/en/publications/recourse-to-induced-abortion-among-native-and-foreign-women-in-de [Accessed 8 Dec. 2022].

Koonin, L.M., Smith, J.C., Ramick, M. and Lawson, H.W. (1992). Abortion surveillance--United States, 1989. *MMWR. CDC surveillance summaries: Morbidity and mortality weekly report. CDC surveillance summaries*, [online] 41(5), pp.1–33. Available at: https://pubmed.ncbi.nlm.nih.gov/1435686/ [Accessed 20 Dec. 2022].

Levine, Phillip B. and Staiger, D. (2004). Abortion Policy and Fertility Outcomes: The Eastern European Experience. *The Journal of Law and Economics*, [online] 47(1), pp.223–243. doi:10.1086/380475.
Ley Orgánica 2/2010, de 3 de marzo, de salud sexual y reproductiva y de la interrupción voluntaria del embarazo. [online] Available at: https://www.boe.es/buscar/act.php?id=BOE-A-2010-3514.

Lobera, J. (2021). Postcolonial Bonds? Latin American Origins, Discrimination, and Sense of Belonging to Spain. *American Behavioral Scientist*, 65(9), p.000276422199675. doi:10.1177/0002764221996757.

Malmusi, D. and Pérez, G. (2009). [Induced abortion in immigrant women in a urban setting]. *Gaceta Sanitaria*, [online] 23 Suppl 1, pp.64–66. doi:10.1016/j.gaceta.2009.05.006.
Ministerio de Sanidad (n.d.). *Ministerio de Sanidad, Consumo y Bienestar Social - Profesionales - Prevención y Promoción - Interrupciones Voluntarias del Embarazo - IVE*. [online] www.sanidad.gob.es. Available at: https://www.sanidad.gob.es/profesionales/saludPublica/prevPromocion/embarazo/home.htm.

Ostrach, B. (2012). 'Yo No Sabía...'—Immigrant Women's Use of National Health Systems for Reproductive and Abortion Care. *Journal of Immigrant and Minority Health*, 15(2), pp.262–272. doi:10.1007/s10903-012-9680-9.

Ostrach, B. (2020). Publicly Funded Abortion and Marginalised People's Experiences in Catalunya. *Anthropology in Action*, 27(1), pp.24–34. doi:10.3167/aia.2020.270103.

Peiro, R., Colomer, C., Alvarez-Dardet, C. and Ashton, JR. (2001). Does the liberalisation of abortion laws increase the number of abortions?: The case study of Spain. *The European Journal of Public Health*, 11(2), pp.190–194. doi:10.1093/eurpub/11.2.190.

Pellico-López, A., Paz-Zulueta, M., Manjón-Rodríguez, J.B., Sánchez Movellán, M., Ajo Bolado, P., García-Vázquez, J., Cayón-De Las Cuevas, J. and Ruiz-Azcona, L. (2022). Evolution of Legislation and the Incidence of Elective Abortion in Spain: A Retrospective Observational Study (2011-2020). *International Journal of Environmental Research and Public Health*, [online] 19(15), p.9674. doi:10.3390/ijerph19159674.

Penfold, R.B. and Zhang, F. (2013). Use of Interrupted Time Series Analysis in Evaluating Health Care Quality Improvements. *Academic Pediatrics*, 13(6), pp.S38–S44. doi:10.1016/j.acap.2013.08.002.

Pérez, G., García-Subirats, I., Rodríguez-Sanz, M., Díez, E. and Borrell, C. (2010). Trends in Inequalities in Induced Abortion According to Educational Level among Urban Women. *Journal of Urban Health*, 87(3), pp.524–530. doi:10.1007/s11524-009-9394-z.

Rodriguez-Alvarez, E., Borrell, L.N., González-Rábago, Y., Martín, U. and Lanborena, N. (2016). Induced abortion in a Southern European region: examining inequalities between native and immigrant women. *International Journal of Public Health*, 61(7), pp.829–836. doi:10.1007/s00038-016-0799-7.

Ruiz-Ramos, M., Ivañez-Gimeno, L. and García León, F.J. (2012). Características sociodemográficas de la interrupción voluntaria del embarazo en Andalucía: diferencias entre población autóctona y extranjera. *Gaceta Sanitaria*, 26(6), pp.504–511. doi:10.1016/j.gaceta.2011.11.017.

Sedgh, G., Bearak, J., Singh, S., Bankole, A., Popinchalk, A., Ganatra, B., Rossier, C., Gerdts, C., Tunçalp, Ö., Johnson, B.R., Johnston, H.B. and Alkema, L. (2016). Abortion incidence between 1990 and 2014: global, regional, and subregional levels and trends. *The Lancet*, [online] 388(10041), pp.258–267. doi:10.1016/s0140-6736(16)30380-4.

Sedgh, G., Singh, S., Shah, I.H., Åhman, E., Henshaw, S.K. and Bankole, A. (2012). Induced abortion: incidence and trends worldwide from 1995 to 2008. *The Lancet*, 379(9816), pp.625–632. doi:10.1016/s0140-6736(11)61786-8.

Senso, S.G., Rodríguez, M.C. and Arenas, M.Á.R. (2022). Factors related to the voluntary interruption of pregnancy in Spain. *Journal of Preventive Medicine and Hygiene*, [online] 63(1), pp.E69–E69. doi:10.15167/2421-4248/jpmh2022.63.1.2299.

Singh, S., Remez, L., Sedgh, G., Kwok, L. and Onda, T. (2018). *Abortion Worldwide 2017: Uneven Progress and Unequal Access*. [online] Guttmacher Institute. Available at: https://www.guttmacher.org/report/abortion-worldwide-2017.

Smith, T. (1993). Influence of socioeconomic factors on attaining targets for reducing teenage pregnancies. *BMJ*, 306(6887), pp.1232–1235. doi:10.1136/bmj.306.6887.1232.

Wetstein, M.E. (1995). The Abortion Rate Paradox: The Impact of National Policy Change on Abortion Rates. *Social Science Quarterly*, [online] 76(3), pp.607–618. Available at: https://www.jstor.org/stable/44072653 [Accessed 8 Dec. 2022].

Women's Link Worldwide (2019). *Barriers to Access to Abortion for Migrant Women in Spain | Women's Link*. [online] www.womenslinkworldwide.org. Available at: https://www.womenslinkworldwide.org/en/news-and-publications/press-room/barriers-to-access-to-abortion-for-migrant-women-in-spain. [Accessed 4 Sep. 2022].

Zurriaga, O., Martínez-Beneito, M.A., Galmés Truyols, A., Torne, M.M., Bosch, S., Bosser, R. and Portell Arbona, M. (2009). Recourse to induced abortion in Spain: profiling of users and the influence of migrant populations. *Gaceta Sanitaria*, [online] 23 Suppl 1, pp.57–63. doi:10.1016/j.gaceta.2009.09.012.

CHAPTER 4

An Evaluation of the Factors affecting the likelihood of an elective abortion among native and migrant women in Spain: 2011-2017

Abstract

The introduction of Organic Law 2/2010 in Spain, allowed for elective abortions among women generally up to 14 weeks of pregnancy. Using pooled data for the period 2011-2017, and employing logistic regression estimates, we investigated some of the factors that are associated with an elective abortion and the variations, if any, based on nationality and time, having regard to different legal developments within Spain. The variables included in our study were age, education, employment status, living arrangements, nationality, contraceptive use, number of children, number of previous abortions and year. As well, weeks of gestation, reason for abortion (i.e. medical or elective), and place where learnt about abortion, all formed part of the descriptive analysis which also included a description of the profile of women obtaining abortions in general. We found that, with some exceptions, the factors associated with the likelihood of an elective abortion were being younger (less than 35 years), less educated, not living in a couple, using contraceptives, having children, and previous abortions. With respect to nationality, we found that the likelihood of an elective abortion was greatest among women from the EU-West and Global North followed by Africans and Eastern Europeans. Further, in comparison with 2011, there was a lesser likelihood of an abortion in the subsequent years. Finally, we found that the associations varied with time in a few instances: among Africans, with respect to education and number of previous abortions; among Latin Americans, with respect to age, employment status, and contraceptive use; and among Spanish nationals, with respect to education, employment status, living arrangement, contraceptive use, number of children and number of previous abortions were found to vary with time. Our findings reinforce that there are still disparities among nationalities regarding abortion outcomes and that a complex set of composite factors act to increase or decrease the risk of abortions. There is need to continue to monitor abortion outcomes to ensure that socio-demographic factors which may affect inequalities are addressed.

Keywords: elective abortions, migrants, natives,

4.1 Introduction and Background

Abortion rights are an important category of sexual and reproductive rights espoused in, and contemplated by various international and regional treaties, instruments, and consensus documents. Article 96 of the Beijing Platform for Action, which is touted as the most progressive blueprint for advancing women's rights (UN Women, 2019), provides that the human rights of women include their right to have control over, and decide freely, on matters related to their sexuality. Abortion rights are consistent with such a position, as such rights provide women with autonomy over the number and spacing of their children, while the specific incidence of abortion is an important phenomenon which serves as a proxy for the frequency of unwanted pregnancy and unmet family planning needs and alludes to the effectiveness of family planning services (Senso, Rodríguez and Arenas, 2022). Accordingly, the sexual and reproductive health rights agenda has been replete with calls and consensus for the legalization of safe abortions.

In 2010, the Spanish government, among other initiatives aimed at the protection, promotion and fulfilment of sexual and reproductive health rights, introduced Organic Law 2/2010 on Sexual and Reproductive Health and the Voluntary Termination of Pregnancy ("**Organic Law 2010**"). The law effectively decriminalized elective abortions (that is, at the request of the woman) up to fourteen weeks of pregnancy generally, and up to twenty-two weeks if there is a serious risk to the life or health of the pregnant woman or foetus. To a large extent, the introduction of Organic Law brings Spain closer into conformity with international and regional consensus regarding the guarantee of sexual and reproductive health rights. However, the international and regional framework on the right to sexual and reproductive health acknowledges that there are huge inequalities and disparities in access to reproductive health services, contraception and abortion, according to income and/or country of residence (Van Lancker, 2015) and it has been suggested in previous literature that despite the progressive response by Spain, there remain inequalities in abortion outcomes. Addressing these inequalities necessitate an understanding of the factors affecting the likelihood of an elective abortion, distinct from medical abortions. Moreover, in the previous chapter, we explored the impact of the law on abortion rates over the period from 2011-2017, against concerns that the law would lead to more abortions. While we found that the law is important in shaping the abortion numbers, socio-demographic factors, including nationality, were

also implicated as being critical to shaping recourse to abortions and therefore these factors must be assessed and understood.

4.2 Factors affecting the likelihood of an abortion

The feminization of Spain's migration process due to a rising demand in jobs which engage women (Vidal-Coso and Miret-Gamundi, 2014), and with a significant focus on family reunification resulting in increasing inflows of women (Casas 2013; Alvarez-Nieto, 2015) offers an impetus for focus on the sexual and reproductive health issues, including abortion issues, of migrant women. In addition, more than half the migrant women residing in Spain are of reproductive ages and thereby require specific sexual and reproductive health care needs (Fernandez 2009; Alvarez-Nieto 2015). Moreover, disparities in migrant's sexual and reproductive health are well documented in the literature (Hernandez-Quevedo and Jimenez-Rubio, 2009; Carmona et al., 2014; Keygnaerta et al., 2014; Fernandez, Cavanillas and de Mateo 2009; Gispert et al. 2008; Rodríguez Álvarez et al. 2016; Hernando Rovirola et al. 2014) and underscores the need for abortion studies to focus on migrant women in addition to natives. One study has found that migrant women in Spain have less access to family planning and contraception; a lower uptake of gynecological healthcare; greater risk of unintended pregnancies and have poorer pregnancy outcomes (Keygnaerta et al., 2014), all factors which suggest a greater risk of abortion. The literature also suggests disproportionately high abortion rates among migrant women (Ruiz-Ramos et al., 2012), which was also found in chapter three of this study, particularly among women from Latin America and the Caribbean, Asia and Africa.

Abortion has been described as a phenomenon which responds to socio-demographic patterns (Zurriaga et al. 2009; Ruiz-Ramos, 2012; Hansen et al., 2009; Gonzalez de Chavez, 2015). Previous studies have focussed on the importance of the social determinants of abortion, including the relevance of age, employments status, education level and immigrant status (Zurriaga et al. 2009; Ruiz-Ramos, 2012; Hansen et al., 2009). It has been concluded that social factors and social vulnerability are associated with a higher risk of voluntary abortion (Gonzalez de Chavez, 2015). To this end, younger women and those not living with a partner have been found to generally have a higher risk of induced and/or voluntary abortion (Ruiz-Ramos et al., 2012; Zurriaga et al. 2009). There have been mixed results in respect of education levels, with one study finding that it is

women with medium level education who are at a higher risk of voluntary abortion (Ruiz-Ramos, 2012) whilst another study found that those with lower levels of education are more likely to have had an abortion (Pérez et al., 2014). Still, another study found that those with higher levels of education were more at risk of an abortion. That same study also found that women with only one child were more likely to have an abortion (Uria and Mosquera,1999). Meanwhile another study found that having three or more children was associated with a greater likelihood of an abortion (Ruiz-Ramos et al., 2012). Further studies addressing inequalities in induced abortions have found that migrants were more likely than Spanish women to have an induced abortion with the highest probability being from Sub-Saharan Africa (Rodriguez-Alvarez et al.,2016; Ruiz-Ramos et al, 2012; Ferrer, 2012).

There are few studies in Spain which addresses the variability in factors associated with induced abortion according to nationality (Llácer Gil de Ramales et al. 2006; Zurriaga et al. 2009; Ruiz-Ramos et al., 2012; Perez et al. 2014; Rodriquez-Alvarez et al. 2016). Moreover, studies which provide an analysis of the entire country and based on different nationality groupings for migrants is scarce, while there is also a dearth of studies which focuses specifically on elective abortions (Pellico-Lopez, 2022), notwithstanding its availability since 2010. Looking at women in the reproductive ages in Spain, we investigate for the entire country, the factors affecting the likelihood of an elective abortion among natives and different groups of migrants for the period 2011-2017.

4.3 Methodology

4.3.1 Data

We used data obtained from the national abortion registries in Spain, which is maintained by the Spanish Ministry of Health and Social Services. Abortion reporting has been mandatory in Spain since 1985 wherein authorized health centres (public or private) are legally required to complete an individual anonymous questionnaire for each abortion they perform which includes certain relevant socio-demographic and epidemiological information. The information collected by autonomous communities are then periodically reported to the central register which maintains a record of all abortions conducted within Spain (Ministerio De Sanadad, n.d.) Pooled cross-sectional abortion data for the period 2011-2017 was used, as well as in accordance with nationality

groupings. In addition, data for the period 2008-2010 were used. Women in the reproductive ages 15-49 residing in Spain were included in the study.

The variables included in the study to assess the factors which impact on the likelihood of an elective abortion are, are age, education, employment status, living arrangement, contraceptive use, number of children alive, number of previous abortions. In addition, for descriptive purposes, the variables financing (public or private), location where abortion is performed, knowledge about abortion and reason for abortion are included.

Data was analysed based on nationality. Five nationality/regional groupings were included, namely: Spain; EU-West and Global North (to include non-Eastern Europe, USA, Canada, Australia and New Zealand); Eastern Europe; Latin America and the Caribbean (to include Mexico); Asia/Oceania (excluding Australia and New Zealand) and Africa. Only women resident in Spain were included in the analysis, such that, as a first step, non-residents were removed from the dataset. The data was further treated as follows: women residing in Spain with dual nationality were included in the sample and treated as Spanish nationals. Where country of birth data was available, but nationality data was missing, those women were removed from dataset with one notable exception, that is, where women's country of birth was Spain. In the latter case, those women were treated as Spanish nationals. Women excluded from the data represented less than 1% of the sample.

4.3.2 Data Transformations

For the period 2011 -2017, the variable on reason for induced abortion had four categories, namely: i) at the request of the woman; ii) pregnancy risk to woman; iii) foetus abnormality; and iv) extreme illness of woman and risk to foetus. This was a multiple response question. The only overlapping categories however were pregnancy risk and foetus abnormality. The variable was first recoded such that the one overlapping category (pregnancy risk and foetus abnormality) was merged with the category foetus abnormality. Categories 'ii to iv' were merged into a new category labelled "medical reasons" and category 'i' was renamed elective abortion. For the period 2003 – 2010 there were three categories for induced abortion, all medical in nature, namely: i) maternal health; ii) foetal risk; and iii) violation.

4.3.3 Analysis

We first carried out univariate analysis describing the socio-demographic profile of women obtaining abortions, and elective abortions. To determine what factors are most likely to predict the risk of an elective abortion, we employed logistic regression analysis. A Chow test was first used to determine whether there were any structural breaks in the data from 2011-2017. The results showed that there were no breaks, suggesting that the data could be pooled. Logistic regressions, using pooled data for 2011-2017 were then performed to predict the likelihood of an elective abortion based on age, education, employment status, nationality, living arrangements, number of children and number of previous abortions.

Logistic regressions were performed first including nationality as a predictor variable to determine any differentials between migrants and Spaniards. A second logistic regression was performed stratifying by nationality to test the determinants of voluntary abortion based on nationality. Our regression models account for testing the hypothesis that elective abortions will vary over time. We created and included multiple dummy variables associated with each time period. Each of these variables is equal to 1 for the years 2012-2017 and 0 for 2011, which was used as the reference year. To test whether there was evidence to suggest that any observed associations between the independent variables and an elective abortion changed over time, we interacted our time dummy variables with all our independent variables. Using the likelihood ratio test, we compared our nested models (without the interaction and with the interaction) to determine whether to include the interactions in the model. Only the statistically significant interactions were included. Data were analysed using SPSS version 23.0 ('SPSS').

4.4 Findings

4.4.1 Description of the study population

Table 4.1 shows the proportion of women resident in Spain who had abortions between 2008-2017 by reason and year. It is observed that between 2008 to 2010a, that is, the period up to June 2010, before the law change, 95% or more of women across all nationalities obtained an abortion under the maternal health reason category. From 2010b, that is the period from July to December 2010 after the law was implemented, until 2017, nearly 95% or more of women across all nationalities had an elective abortion.

Table 4.2 shows the socio-demographic characteristics of the female population 15-49 years in Spain obtaining an abortion, based on pooled data for the years 2011-2017. Among all groups of women, the majority of the population having an abortion were between the ages of 20-34 years, amounting to approximately 60%. In all cases, except among women from Eastern Europe (8%), Africa (5%) and Asia/Oceania (4%) where the percentages were lower, between 7-12% of the population having an abortion were less than 20 years of age. Except among women from Asia/Oceania (10%), less than 10% of the population having an abortion were women 40 years or older. Women from the EU-West and Global North had the highest proportion of women educated up to tertiary level who had performed an abortion (27%), followed by Spanish women (17%). In all other cases, university women accounted for less than 10% of those having an abortion. Among African women, about 4 in 10 abortions were performed by those with the lowest levels of education compared with about 3 in 10 among women from Asia, 1 in 4 among Eastern European women, 1 in 5 among Latin American and the Caribbean women, and 1 in 10 among women from the EU West and Global North. In all cases except among African women, where the highest proportions having an abortion were those unemployed (54%), the majority of women having an abortion were employed (approximately 60% among women from the EU-West and Global North, Asia/Oceania and Latin American and the Caribbean and 54% among Eastern European women).

Women from Spain (16%), accounted for the highest proportion of abortions among students, followed by women from the EU-West and Global North and Latin America (11% in both cases). A little over 50% of women who had an abortion from Latin America and the Caribbean, and Spain, did not live as a couple. In contrast, about 80% of women from Asia/Oceania, 68% of Eastern European women, and 54% of women from the EU-West and Global North and Africa who had an abortion, lived in a couple. Spanish women accounted for the highest percentage of those having an abortion who used contraceptives (62%), followed by women from Latin America and the Caribbean (52%) and the EU-West and Global North (51%). On the contrary, a greater proportion of women having an abortion from Asia/Oceania (67%), Eastern Europe (61%), and Africa (60%) did not use contraceptives. Among women from the EU-West and Global North, majority (55%) of those who had an abortion had no children. Similarly, about 52% of Spanish women who had an abortion, had no children.

Table 4.1: Proportion of women who had abortions by reason before and after the law change (2008-2017**)**

Year	Reason for Abortion	EU-West and Global North		Eastern Europe		Asia/Oceania		Latin America & the Caribbean		Africa		Spain	
		N	%	N	%	N	%	N	%	N	%	N	%
2008	Maternal Health	2281	97.6	10317	99.3	1665	98.3	28576	99.2	5920	98.3	61404	95.3
	Other	56	2.4	72	0.6	28	1.7	237	0.8	105	1.7	3010	4.67
2009	Maternal Health	2226	97.8	9062	99.1	1823	98.5	25789	99.2	5916	98.3	60916	95.1
	Other	49	2.2	86	0.9	27	1.5	214	0.8	103	1.7	3109	4.9
2010a	Maternal Health	1080	98.3	4742	99.1	1024	99.2	12442	99.1	2996	98.3	33200	95.3
	Other	19	1.7	41	0.9	8	0.8	118	0.9	53	1.7	1628	4.7
2010b	Medical	96	9.5	328	7.7	89	8.4	844	6.9	228	8.1	3742	11.7
	Elective	910	90.5	3907	92.3	972	91.6	11350	93.1	2600	91.9	28501	88.3
2011	Medical	194	8.5	602	6.2	221	8.5	1759	7.1	378	6.1	7512	10.6
	Elective	2082	91.5	9063	93.8	2380	91.5	23161	92.9	5779	93.9	63475	89.4
2012	Medical	106	5.5	501	5.7	197	7.7	1402	6.1	337	5.9	5686	8.2
	Elective	1805	94.5	8276	94.3	2350	92.3	21499	93.9	5352	94.1	63839	91.8
2013	Medical	158	8.0	691	8.6	263	9.7	1637	7.7	381	7.1	6285	9.3
	Elective	1807	92.0	7366	91.4	2452	90.3	19590	92.3	4981	92.9	61044	90.7
2014	Medical	139	7.6	666	9.4	278	10.6	1300	7.7	404	8.6	6553	10.9
	Elective	1699	92.4	6438	90.6	2351	89.4	15668	92.3	4285	91.4	53476	89.1
2015	Medical	157	8	604	8.7	210	8.0	1248	7.8	345	7.4	6160	10.2
	Elective	1798	92	6304	91.3	2416	92.0	14689	92.2	4294	92.6	54335	89.8
2016	Medical	133	6.3	520	7.8	221	8.8	1194	7.7	313	6.9	5979	9.9
	Elective	1979	93.7	6134	92.2	2294	91.2	14267	92.3	4202	93.1	54172	90.1
2017	Medical	156	6.8	469	7.7	205	8.8	1228	7.6	300	6.7	6165	10.1
	Elective	2152	93.2	5600	92.3	2121	91.2	14860	92.4	4170	93.3	54953	89.9

b:New Abortion law was introduced July 5, 2010

108

Table 4.2: Socio-demographic characteristics of the population obtaining an abortion by nationality

Variable	EU-West and Global North		Eastern Europe		Asia		Latin America and the		Africa		Spain	
	N	%	N	%	N	%	N	%	N	%	N	%
Age												
Less than 20 years	1050	7.3	3986	7.5	725	4.0	13980	10.5	1832	5.2	57194	12.7
20-24 years	2899	20.2	11129	20.9	2424	13.5	26870	20.1	6429	18.1	97946	21.8
25-29 years	3340	23.3	13683	25.7	4188	23.3	30615	22.9	8775	24.7	94823	21.1
30-34 years	3268	22.7	12370	23.2	4993	27.8	31997	24.0	9657	27.2	89437	19.9
35-39 years	2625	18.3	8751	16.4	3841	21.4	22146	16.6	6583	18.5	76017	16.9
40 years and over	1061	7.4	3091	5.8	1614	9.0	7416	5.6	2059	5.8	31367	7.0
45 years and over	122	0.8	224	0.4	174	1.0	478	0.4	186	0.5	2850	0.6
Education												
First Level or below	1531	11.0	13824	26.7	5168	29.9	26083	19.9	13996	40.7	86741	19.6
Compulsory	4009	28.7	19212	37.1	7173	41.5	54914	41.9	12805	37.2	161569	36.6
Non-compulsory	4623	33.1	14431	27.8	3460	20.0	40141	30.6	5908	17.2	118936	26.9
University	3804	27.2	4384	8.5	1503	8.7	9881	7.5	1681	4.9	74579	16.9
Employment Status												
Employed/Pensioner	8783	62.9	27701	53.7	10977	62.4	79265	60.8	13232	38.9	233544	53.3
Student	1485	10.6	2280	4.4	726	4.1	14340	11.0	2248	6.6	68686	15.7
Unemployed	3691	26.4	21557	41.8	5882	33.4	36806	28.2	18504	54.4	136145	31.1
Living Arrangement												
Not as a couple	6503	46.5	16649	31.8	3446	19.6	67852	52.0	15981	45.9	232360	53.0
Live as a couple	7489	53.5	35694	68.2	14179	80.4	62574	48.0	18801	54.1	206333	47.0
Contraceptive Use												
Yes	5311	51.2	17619	39.0	3846	33.4	52115	52.2	10275	40.5	222311	61.5
No	5068	48.8	27570	61.0	7659	66.6	47766	47.8	15086	59.5	138947	38.5
Type of Contraceptive												
Natural	372	4.0	2883	11.2	455	4.4	3408	4.0	1359	6.7	18991	6.1
Barrier	2879	31.0	8488	33.1	2423	23.5	24850	29.0	4449	21.8	133131	42.9
Mechanics	106	1.1	385	1.5	136	1.3	1131	1.3	285	1.4	4094	1.3
Hormonal	1816	19.5	5354	20.9	728	7.1	21819	25.4	3961	19.4	62285	20.0
Definitive Methods	138	1.5	509	2.0	104	1.0	907	1.1	221	1.1	3810	1.2
Other Methods	3986	42.9	8045	31.3	6454	62.7	33621	39.2	10160	49.7	88376	28.4
Children Alive												
No children	7963	55.4	15588	29.3	3666	20.4	45259	33.9	13059	36.8	231585	51.5
1 Living Child	2926	20.4	18934	35.6	4108	22.9	42155	31.6	8811	24.8	110049	24.5
>=2 Children	3476	24.2	18712	35.2	10185	56.7	46088	34.5	13651	38.4	107993	24.0
Reason for Abortion												
Medical	1043	7.3	4053	7.6	1595	8.9	9768	7.3	2458	6.9	44340	9.9
Voluntary	13322	92.7	49181	92.4	16364	91.1	123734	92.7	33063	93.1	405294	90.1
Weeks of Gestation												
< 8 weeks	8406	58.5	26244	49.3	10827	60.3	70401	52.7	20263	57.0	251554	55.9
8-12 weeks	4891	34.0	22608	42.5	5809	32.3	52165	39.1	12526	35.3	152599	33.9
>= 13 weeks	1068	7.4	4382	8.2	1322	7.4	10936	8.2	2732	7.7	45467	10.1
Previous abortion												
None	9429	65.6	22783	42.8	10597	59.0	73413	55.0	19741	55.6	306702	68.2
One	3535	24.6	14795	27.8	4638	25.8	41586	31.2	9710	27.3	99677	22.2
>=2	1401	9.8	15656	29.4	2724	15.2	18502	13.9	6070	17.1	43242	9.6
Public Financing												
Yes	8253	57.5	36630	68.8	10688	59.5	88635	66.4	26471	74.5	318446	70.8
No	6112	42.5	16604	31.2	7271	40.5	44867	33.6	9050	25.5	131188	29.2
Where abortion performed												
Hospital	1669	11.6	6114	11.5	1789	10.0	17460	13.1	3221	9.1	48139	10.7
Outside Hospital	12696	88.4	47120	88.5	16170	90.0	116042	86.9	32300	90.9	401495	89.3
Knowledge about abortion												
Public Heath Center	8067	56.2	34118	64.1	10013	55.8	79674	59.7	26329	74.1	292107	65.0
Private Health	2397	16.7	5556	10.4	2755	15.3	16206	12.1	2779	7.8	46234	10.3
Other	3901	27.1	13560	25.5	5191	28.9	37622	28.2	6413	18.1	111293	24.8

On the contrary, about 57 % of women from Asia/Oceania who had an abortion had two or more children. Among all group of women, 90% or more of women who had an abortion, had an elective abortion as opposed to a medical abortion.

A majority of Asian/Oceanic women (60%), those from the EU-West and Global North (59%), African women (57%), Spanish women (56%), and Latin America and the Caribbean women (53%) had an abortion at less than 8 weeks gestation. Women from Eastern Europe had a slight majority of women having an abortion at 8 weeks or more. Except for women from Eastern Europe (43%), majority of those having an abortion had no previous abortions: EU-West and Global North (70%); Spain (68%); Asia/Oceania (59%); Africa (56%) and Latin America and the Caribbean (55%). Majority of women obtained public financing for their abortion procedure: Africa (74%); Spain (71%); Eastern Europe (67%); Latin America and the Caribbean (66%); Asia/Oceania (59%) and EU-West and Global North (56%). In all cases, nearly 90% or more of abortions were performed outside of a hospital. Most women learned about abortion procedures at a public health centre.

Table 4.3 shows, based on pooled data for 2011-2017, the characteristics of the population obtaining an elective abortion. It is observable that the results and patterns are very similar to those obtained when pooled data for all abortions were examined (See Table 4.2), with one exception. Among all groups of women, not excepting those from Eastern Europe, a majority had their abortion at less than 8 weeks gestation. Women from the EU-West and Global North and Spain appear the most similar, with greater proportions single, employed, with no children, using contraceptives, young (between 20-34 years). Women from the EU-West and Global North however have greater proportions with higher levels of education, that is, non-compulsory and above. Women from Latin America also share similar characteristics, except that among these women, a greater proportion of them have children. Women from Eastern Europe and Asia/Oceania tend to be more similar, with greater proportions living in a couple, employed, having children, not using contraceptives, and educated up to compulsory level, but Asian/Oceanic women who have abortions, are slightly older. Africans are more similar to Eastern European and Asian women, except that a greater proportion of Africans are unemployed than employed. In fact, these are the only group of women where a greater proportion of those who had an elective abortion were unemployed.

Table 4.3: Socio-demographic characteristics of the population obtaining an elective abortion by nationality

Variable	EU-West and Global North		Eastern Europe		Asia		Latin America and the		Africa		Spain	
	N	%	N	%	N	%	N	%	N	%	N	%
Age												
Less than 20 years	983	7.4	3631	7.4	656	4.0	12690	10.3	1662	5.0	53120	13.1
20-24 years	2727	20.5	10284	20.9	2158	13.2	25021	20.2	5963	18.0	92732	22.9
25-29 years	3153	23.7	12683	25.8	3831	23.4	28527	23.1	8215	24.8	88227	21.8
30-34 years	3038	22.8	11435	23.3	4553	27.8	29772	24.1	9066	27.4	78800	19.4
35-39 years	2361	17.7	8085	16.4	3531	21.6	20520	16.6	6116	18.5	63846	15.8
40 years	956	7.2	2858	5.8	1479	9.0	6771	5.5	1877	5.7	26101	6.4
45 years and over	104	0.8	205	0.4	156	1.0	433	0.3	164	0.5	2468	0.6
Education												
First Level or	1450	11.2	12967	27.1	4860	30.8	24514	20.2	13107	40.9	80644	20.2
Compulsory	3736	28.8	17776	37.1	6563	41.6	51077	42.1	11963	37.3	148525	37.2
Non-compulsory	4308	33.2	13192	27.5	3062	19.4	36909	30.4	5455	17.0	107381	26.9
University	3472	26.8	3995	8.3	1292	8.2	8902	7.3	1547	4.8	62973	15.8
Employment Status												
Employed/Pension	8172	63.0	25581	53.7	10061	62.7	73789	61.1	12463	39.4	207006	52.2
Student	1378	10.6	2086	4.4	647	4.0	13154	10.9	2074	6.6	64320	16.2
Unemployed	3427	26.4	19953	41.9	5340	33.3	33904	28.1	17119	54.1	124967	31.5
Living Arrangement												
Not as a couple	6166	47.4	15388	31.8	3097	19.3	62952	52.0	15000	46.3	219679	55.3
Live as a couple	6838	52.6	33001	68.2	12974	80.7	58015	48.0	17406	53.7	177441	44.7
Contraceptive Use												
Yes	5057	52.1	16482	39.5	3438	33.2	48176	52.2	9629	40.9	209204	63.7
No	4651	47.9	25227	60.5	6907	66.8	44180	47.8	13932	59.1	119193	36.3
Children Alive												
No children	7353	55.2	14044	28.6	3198	19.5	41580	33.6	12042	36.4	208421	51.4
1 Living Child	2685	20.2	17522	35.6	3652	22.3	39059	31.6	8159	24.7	96218	23.7
>=2 Children	3284	24.7	17615	35.8	9514	58.1	43095	34.8	12862	38.9	100654	24.8
Reason for Abortion												
Medical	1043	7.3	4053	7.6	1595	8.9	9768	7.3	2458	6.9	44340	9.9
Voluntary	13322	92.7	49181	92.4	16364	91.1	123734	92.7	33063	93.1	405294	90.1
Weeks of Gestation												
< 8 weeks	8145	61.1	25239	51.3	10347	63.2	68403	55.3	19814	59.9	243788	60.2
8-12 weeks	4775	35.8	21915	44.6	5562	34.0	50859	41.1	12228	37.0	147899	36.5
>= 13 weeks	402	3.0	2027	4.1	455	2.8	4472	3.6	1021	3.1	13607	3.4
Previous abortion												
None	8652	64.9	20838	42.4	9670	59.1	67570	54.6	18211	55.1	271456	67.0
One	3346	25.1	13753	28.0	4218	25.8	38814	31.4	9180	27.8	93167	23.0
>=2	1324	9.9	14590	29.7	2476	15.1	17350	14.0	5672	17.2	40669	10.0
Public Financing												
Yes	7790	58.5	34713	70.6	10117	61.8	84057	67.9	25045	75.7	290479	71.7
No	5532	41.5	14468	29.4	6247	38.2	39677	32.1	8018	24.3	114815	28.3
Where abortion performed												
Hospital	1289	9.7	4961	10.1	1313	8.0	14018	11.3	2438	7.4	31636	7.8
Outside Hospital	12033	90.3	44220	89.9	15051	92.0	109716	88.7	30625	92.6	373658	92.2
Knowledge about abortion												
Public Heath	7561	56.8	32021	65.1	9382	57.3	74808	60.5	24694	74.7	262382	64.7
Private Health	2144	16.1	5000	10.2	2516	15.4	14820	12.0	2525	7.6	39283	9.7
Other	3617	27.2	12160	24.7	4466	27.3	34106	27.6	5844	17.7	103629	25.6

4.4.2 Predictors of the likelihood of an elective abortion

We now turn to the results of our binary logistic regressions where we simultaneously control for the different covariates and include the data for all nationalities (Table 4.4). It is observed that age, education, nationality, living arrangement, contraceptive use, number of children, number of previous abortions, and year, are all significant predictors of the likelihood of an elective abortion, albeit there are notable differentials based on nationality.

Women less than 35 years, compared with those 35 years and older ($OR_{<25years}$ = 2.045; p = 0.000; $OR_{25-34years}$ = 1.634; p = 0.000); those with lower levels of education, compared with those with university level ($OR_{1stLevel}$ = 1.501; p= 0.000; $OR_{Compulsory}$= 1.428; p = 0.000); ($OR_{Non-Compulsory}$= 1.407; p = 0.000); those not living in a couple (OR = 2.169; p = 0.000); those with children ($OR_{>=2}$= 2.477; p = 0.000; OR_{one}=1.249; p=0.000); those who use contraceptives (OR_{Yes} =1.937; p= 0.000); and those who have had previous abortions (OR_{One}=1.487; p=0.000 $OR_{>=2}$= 1.422; p = 0.000) were all found to be more likely to have had an elective abortion.

Relative to nationality, in comparison with Spanish women, in order of significance, women from the EU-West and Global North (OR = 1.768; p= 0.000); women from Africa (OR = 1.239; p= 0.000); and those from Eastern Europe (OR = 1.206; p =0.000) were more likely to have had an elective abortion. There was no statistically significant relationship observed when Spanish women were compared with women from Latin America and the Caribbean and Asia/Oceania. In comparison with 2011, women were less likely to have an elective abortion between 2012 and 2017 (OR_{2012} = 0.993; p= 0.000; OR_{2016} = 0.753; p= 0.000; OR_{2017} = 0.751; p= 0.000; OR_{2013} = 0.717; p=0.000; OR_{2014} = 0.640). These decreased odds represent decreasing percentages ranging between 25% to 36%.

When the predictors of the likelihood an elective abortion were assessed separately for each group of nationalities (Tables 4.5-4.10), age was found to be a significant predictor in all cases except among women from Asia/Oceania and among Latin American women 25-34 years, compared with those 35 years and above. Except among Latin America women, where those <25 years compared with those 35 years or more, had lower odds of an elective abortion ($OR_{<25years}$ =0.750; p = 0.005), being younger was found to be associated with increased odds of an elective abortion. The odds were greater among women less than 25 years, than those 25-34 years, except among African women where the odds were greater among 25–34-year-olds. The odds were as follows: EU-West and Global North ($OR_{<25years}$ = 2.124; p = 0.000; $OR_{25-34years}$ = 1.832; p = 0.000); Spain ($OR_{<25years}$ = 2.551; p = 0.000; $OR_{25-34years}$ = 1.816; p = 0.000); Africa ($OR_{25-34years}$ = 1.278; p = 0.000; $OR_{<25years}$ = 1.213; p = 0.023); Eastern Europe ($OR_{<25years}$ = 1.171; p = 0.009; $OR_{25-34years}$ = 1.111; p = 0.028). Additionally, among women from Latin America and the Caribbean, it was observed that the effect of age on the likelihood of an abortion varied with time among women less than 25

years. As compared with 2011, between 2012-2017, a greater likelihood of an elective abortion was observed among those less than 25 years as compared with those 35 years or older (**OR$_{2016}$** =2.024; p =0.000; **OR$_{2015}$** =1.830; p =0.000; **OR$_{2017}$** =1.779; p =0.000; **OR$_{2014}$** =1.492; p =0.005; **OR$_{2012}$** =1.463; p =0.007; **OR$_{2013}$** =1.373; p =0.018).

Education was found to be a significant predictor of an elective abortion among all groups of women except Africans. In comparison with higher levels of education (i.e., university level), attaining less than university level education were found to be associated with increased odds of an elective abortion. Among women from Eastern Europe, a significant association was only found when those with the lowest levels of education were compared with those with university level education (**OR$_{1stLevel}$**= 1.179; p = 0.028). Among women from the EU-West and the Global North the odds were slightly higher among those with non-compulsory level than those with first level and below education (**OR$_{Non-Compulsory}$**= 1.490; p = 0.000; **OR$_{1stLevel}$**= 1.458; p = 0.033), but no differences were observed when those compulsory secondary level education were compared with those with university level education. Among Spanish women, the odds were greater among those with non-compulsory studies (**OR$_{Non-Compulsory}$**= 1.567; p = 0.000) than those with compulsory secondary level education (**OR$_{Compulsory}$**= 1.427; p = 0.000), but no differences were observed when those with first level education or below were compared with those with university level education.

Finally, among women from Latin America and the Caribbean and Asia/Oceania, the odds were greatest among women with the lowest level of education, followed by those with compulsory secondary level and those with non-compulsory studies. The odds ratios among women from Asia/Oceania were, (**OR$_{1stLevel}$**= 2.006; p = 0.000; **OR$_{Compulsory}$**= 1.393; p = 0.001; **OR$_{Non-Compulsory}$**= 1.267; p = 0.020); whilst those among women from Latin America and the Caribbean were, (**OR$_{1stLevel}$**= 1.435; p = 0.000; **OR$_{Compulsory}$**= 1.300; p = 0.000; **OR$_{Non-Compulsory}$**= 1.213; p = 0.000).

Table 4.4: Regression estimates showing predictors of elective abortion

Characteristics	Coefficient (β)	S.E of estimates β	p-values	Odds ratio (OR)	95% CI	
Age at time of IA						
<25	0.716	.017	0.000*	2.045	1.978	2.115
25-34	0.491	.012	0.000*	1.634	1.595	1.674
>=35 (Ref)	………	………	………	………	………	………
Education						
First Level or below	0.363	0.017	0.000*	1.501	1.450	1.555
Compulsory Secondary	0.293	0.014	0.000*	1.407	1.366	1.448
Non-compulsory	0.306	0.014	0.000*	1.428	1.389	1.469
University (Ref)	………	………	………	………	………	………
Employment Status						
Unemployed	0.016	0.012	0.180	1.016	0.993	1.04
Student	-0.033	0.020	0.090	0.967	0.931	1.005
Employed (Ref)	………	………	………	………	………	………
Nationality						
EU-West and Global North	0.570	0.043	0.000*	1.768	1.627	1.922
Eastern Europe	0.188	0.020	0.000*	1.206	1.160	1.255
Asia/Oceana	-0.056	0.033	0.093	0.946	0.886	1.009
LAC	0.011	0.014	0.440	1.011	0.983	1.040
Africa	0.214	0.027	0.000*	1.239	1.175	1.306
Spain (Ref)	………	………	………	………	………	………
Living Arrangements						
Not as a couple	0.774	0.012	0.000*	2.169	2.119	2.22
Live in a couple (Ref)	………		………	………	………	………
Contraceptive Use						
Yes	0.661	0.010	0.000*	1.937	1.898	1.976
No (Ref)	………	………	………	………	………	………
Children						
None (Ref)	………	………	………	………	………	………
One	0.223	0.013	0.000*	1.249	1.218	1.282
>=2	0.907	0.016	0.000*	2.477	2.402	2.554
Previous Abortions						
None (Ref)	………	………	………	………	………	………
One	0.397	0.013	0.000*	1.487	1.449	1.526
>=2	0.352	0.018	0.000*	1.422	1.374	1.472
Year						
2011 (Ref)	………	………	………	………	………	………
2012	-0.007	0.020	0.732	0.993	0.955	1.033
2013	-0.333	0.019	0.000*	0.717	0.691	0.744
2014	-0.446	0.019	0.000*	0.64	0.616	0.664
2015	-0.337	0.020	0.000*	0.714	0.687	0.741
2016	-0.284	0.020	0.000*	0.753	0.724	0.783
2017	-0.287	0.020	0.000*	0.751	0.722	0.78
Constant	0.779	0.021	0.000	2.180		
N		526312				
-2LL		288619.575				
R2		0.038				
Adjusted R2		0.094				

*p<.05; CI: Confidence Interval

Table 4.5: Regression showing predictors of elective abortions among women from the EU-West and Global North

Characteristics	Coefficient (β)	S.E of estimates β	p-values	Odds ratio (OR)	95% CI	
Age at time of IA						
<25	0.753	0.139	0.000*	2.124	1.619	2.787
25-34	0.605	0.102	0.000*	1.832	1.499	2.239
>=35 (Ref)	……....	……....	……....	……....	……....	……....
Education						
First Level or below	0.377	0.177	0.033*	1.458	1.031	2.063
Compulsory Secondary	0.150	0.117	0.198	1.162	0.925	1.461
Non-Compulsory	0.399	0.103	0.000*	1.490	1.217	1.824
University (Ref)	……....	……....	……....	……....	……....	……....
Employment Status						
Unemployed	-0.100	0.100	0.315	0.904	0.743	1.100
Student	-0.448	0.156	0.004*	0.639	0.471	0.867
Employed (Ref)	……....	……....	……....	……....	……....	……....
Living Arrangements						
Not as a couple	0.658	.096	0.000*	1.931	1.598	2.332
Live in a couple (Ref)	……....	……....	……....	……....	……....	……....
Contraceptive Use						
Yes	0.530	0.087	0.000*	1.698	1.432	2.014
No (Ref)	……....	……....	……....	……....	……....	……....
Children						
None (Ref)	……....	……....	……....	……....	……....	……....
One	0.176	0.113	0.119	1.192	0.956	1.487
>=2	0.777	0.127	0.000*	2.175	1.695	2.792
Previous Abortions						
None (Ref)	……....	……....	……....	……....	……....	……....
One	0.497	0.112	0.000*	1.644	1.32	2.047
>=2	0.229	0.160	0.152	1.257	0.919	1.72
Year						
2011 (Ref)	……....	……....		……....		
2012	0.180	0.186	0.334	1.197	0.831	1.725
2013	-0.571	0.158	0.000*	0.565	0.415	0.770
2014	-0.464	0.162	0.004*	0.629	0.458	0.864
2015	-0.331	0.164	0.044*	0.718	0.520	0.991
2016	-0.130	0.168	0.438	0.878	0.632	1.220
2017	-0.290	0.161	0.071	0.748	0.546	1.025
Constant	1.511	.166	0.000	4.531		
N			9766			
-2LL			4414.966			
R2			0.024			
Adjusted R2			0.064			

*p<.05; CI:Confidence Interval

Table 4.6: Regression estimates showing predictors of elective abortions among Eastern European women

Characteristics	Coefficient (β)	S.E of estimates β	p-values	Odds ratio (OR)	95% CI	
Age at time of IA						
<25	0.158	0.061	0.009*	1.171	1.040	1.320
25-34	0.105	0.048	0.028*	1.111	1.012	1.221
>=35 (Ref)	…........	…........	…........	…........	…........	…........
Education						
First Level or below	0.164	0.075	0.028*	1.179	1.018	1.365
Compulsory Secondary	0.015	0.068	0.830	1.015	0.888	1.159
Non-Compulsory	-0.083	0.067	0.214	0.920	0.808	1.049
University (Ref)	…........	…........	…........	…........	…........	…........
Employment Status						
Unemployed	.029	.039	0.462	1.029	0.953	1.112
Student	.115	.092	0.213	1.121	0.936	1.343
Employed (Ref)	…........	…........	…........	…........	…........	…........
Living Arrangements						
Not as a couple	0.156	0.043	0.000*	1.169	1.074	1.272
Live in a couple (Ref)	…........		…........	…........	…........	…........
Contraceptive Use						
Yes	0.305	0.039	0.000*	1.356	1.257	1.464
No (Ref)	…........	…........	…........	…........		
Children						
None (Ref)	…........	…........	…........	…........	…........	…........
One	0.404	0.048	0.000*	1.498	1.363	1.648
>=2	0.683	0.056	0.000*	1.979	1.774	2.208
Previous Abortions						
None (Ref)	…........	…........	…........	…........	…........	…........
One	0.134	0.046	0.003*	1.143	1.046	1.25
>=2	0.067	0.047	0.153	1.070	0.975	1.173
Year						
2011 (Ref)	…........	…........		…........	…........	…........
2012	-0.090	0.074	0.226	0.914	0.791	1.057
2013	-0.614	0.068	0.000*	0.541	0.473	0.619
2014	-0.746	0.069	0.000*	0.474	0.415	0.542
2015	-0.637	0.071	0.000*	0.529	0.460	0.608
2016	-0.506	0.073	0.000*	0.603	0.522	0.696
2017	-0.500	0.075	0.000*	0.606	0.523	0.703
Constant	2.211	0.093	.000	9.124	…........	…........
N		42408				
-2LL		22675.355				
R2		0.012				
Adjusted R2		0.028				

*p<.05; CI: Confidence Interval

Table 4.7: Regression estimates showing predictors of elective abortions among Asian/Oceanic women

Characteristics	Coefficient (β)	S.E of estimates β	p-values	Odds ratio (OR)	95% CI	
Age at time of IA						
<25	-0.036	0.115	0.754	0.965	0.771	1.207
25-34	0.025	0.077	0.742	1.026	0.882	1.192
>=35 (Ref)	…….....	…….....	…….....	…….....	…….....	…….....
Education						
First Level or below	0.696	0.120	0.000*	2.006	1.586	2.538
Compulsory Secondary	0.332	0.099	0.001*	1.393	1.148	1.692
Non-Compulsory	0.237	0.102	0.020*	1.267	1.038	1.548
University (Ref)	…….....	…….....	…….....	…….....	…….....	…….....
Employment Status						
Unemployed	-0.190	0.073	0.009*	0.827	0.717	0.953
Student	0.168	0.158	0.288	1.183	0.868	1.613
Employed (Ref)	…….....	…….....	…….....	…….....	…….....	…….....
Living Arrangements						
Not as a couple	0.155	0.090	0.085	1.167	0.979	1.392
Live in a couple (Ref)	…….....		…….....	…….....	…….....	…….....
Contraceptive Use						
Yes	0.596	0.230	0.010	1.815	1.156	2.850
No (Ref)	…….....	…….....	…….....	…….....	…….....	…….....
Children						
None (Ref)	…….....	…….....	…….....	…….....	…….....	…….....
One	0.354	0.103	0.001*	1.425	1.164	1.744
>=2	0.772	0.104	0.000*	2.164	1.764	2.654
Previous Abortions						
None (Ref)	…….....	…….....	…….....	…….....	…….....	…….....
One	-0.264	0.076	0.001*	0.768	0.662	0.892
>=2	-0.357	0.089	0.000*	0.700	0.588	0.834
Year						
2011 (Ref)	…….....	…….....		…….....	…….....	…….....
2012	-.051	.162	0.753	0.950	0.692	1.306
2013	-.397	.149	0.008*	0.673	0.502	0.901
2014	-.325	.151	0.032*	0.723	0.537	0.972
2015	-.168	.157	0.283	0.845	0.621	1.149
2016	-.233	.158	0.140	0.792	0.582	1.079
2017	-.122	.164	0.455	0.885	0.642	1.219
Interactions**						
*Year*Contraceptive Use*						
2013*Yes	-0.814	0.276	0.003	0.443	0.258	0.761
2014*Yes	-0.729	0.278	0.009	0.482	0.280	0.832
2015*Yes	-0.746	0.286	0.009	0.474	0.271	0.830
2016*Yes	-0.845	0.289	0.003	0.430	0.244	0.758
2017*Yes	-0.853	0.299	0.004	0.426	0.237	0.765
Constant	1.713	0.172	0.000	5.543	…….....	…….....
N		10773				
-2LL		6975.704				
R2		0.019				
Adjusted R2		0.039				

*p<.05: ** only statistically significant values are included in the table;
CI: Confidence Interval

Table 4.8: Regression estimates showing predictors of elective abortions among Latin America and Caribbean women

Characteristics	Coefficient (β)	S.E of estimates β	p-values	Odds ratio	95% CI	
Age at time of IA						
<25	-0.288	0.103	0.005*	0.750	0.613	0.918
25-34	0.144	0.094	0.128	1.154	0.959	1.389
>=35 (Ref)	…........	…........	…........	…........		
Education						
First Level or below	0.361	0.051	0.000*	1.435	1.299	1.584
Compulsory Secondary	0.262	0.043	0.000*	1.300	1.194	1.415
Non-Compulsory	0.193	0.042	0.000*	1.213	1.117	1.317
University (Ref)	…........	…........	…........	…........	…........	…........
Employment Status						
Unemployed	-0.196	0.076	0.010*	0.822	0.709	0.954
Student	0.014	0.118	0.904	1.014	0.805	1.278
Employed (Ref)	…........	…........	…........	…........	…........	…........
Living Arrangements						
Not as a couple	-0.002	0.027	0.939	0.998	0.947	1.052
Live in a couple (Ref)	…........		…........	…........	…........	…........
Contraceptive Use						
Yes	0.247	0.067	0.000*	1.280	1.122	1.460
No (Ref)	…........	…........	…........	…........	…........	…........
Children						
None (Ref)	…........	…........	…........	…........	…........	…........
One	0.084	0.033	0.012*	1.088	1.019	1.161
>=2	0.186	0.038	0.000*	1.205	1.119	1.297
Previous Abortions						
None (Ref)	…........	…........	…........	…........	…........	…........
One	0.124	0.028	0.000*	1.133	1.072	1.197
>=2	0.139	0.038	0.000*	1.150	1.066	1.239
Year						
2011 (Ref)	…........	…........		…........	…........	…........
2012	-.004	.120	0.972	0.996	0.787	1.260
2013	-.409	.112	0.000*	0.664	0.534	0.827
2014	-.376	.117	0.001*	0.687	0.546	0.864
2015	-.518	.116	0.000*	0.596	0.475	0.748
2016	-.581	.115	0.000*	0.559	0.447	0.700
2017	-.569	.116	0.000*	0.566	0.451	0.710
Interactions **						
*Year*Age*						
2012* <25 Years	0.381	0.141	0.007*	1.463	1.110	1.929
2013*<=25 Years	0.317	0.133	0.018*	1.373	1.057	1.782
2014*<=25 Years	0.400	0.141	0.005*	1.492	1.131	1.968
2015*<=25 Years	0.604	0.144	0.000*	1.830	1.381	2.426
2016*<=25 Years	0.705	0.142	0.000*	2.024	1.531	2.676
2017*<=25 Years	0.576	0.140	0.000*	1.779	1.351	2.343
*Year*Employment*						
2013*Unemployed	0.314	0.101	0.002*	1.369	1.123	1.669
2015*Unemployed	0.290	0.109	0.008*	1.337	1.079	1.655
*Year*Contraceptive Use*						
2012*Yes	-0.333	0.093	0.000*	0.717	0.597	0.861
2013*Yes	-0.440	0.089	0.000*	0.644	0.542	0.766
2014*Yes	-0.384	0.093	0.000*	0.681	0.568	0.818
2015*Yes	-0.330	0.094	0.000*	0.719	0.598	0.865
2016*Yes	-0.214	0.096	0.026*	0.808	0.670	0.974
Constant	2.401	.096	0.000	11.030	…........	…........
N		94890				
-2LL		50959.086				
R2		0.006				
Adjusted R2		0.015				

*p<.05; ** only statistically significant values are included in the table;
CI: Confidence Interval

Table 4.9: Regression estimates showing predictors of elective abortions among African women

Characteristics	Coefficient (β)	S.E of estimates β	p-values	Odds ratio	95% CI	
Age at time of IA						
<25	0.193	0.085	0.023*	1.213	1.027	1.432
25-34	0.245	0.064	0.000*	1.278	1.128	1.448
>=35 (Ref)	…........	…........	…........	…........	…........	…........
Education						
First Level or below	-0.534	0.405	0.187	0.586	0.265	1.296
Compulsory Secondary	-0.121	0.417	0.772	0.886	0.392	2.006
Non-Compulsory	-0.404	0.425	0.342	0.668	0.290	1.536
University (Ref)	…........	…........	…........	…........	…........	…........
Employment Status						
Unemployed	-0.405	0.169	0.017	0.667	0.479	0.929
Student	0.077	0.416	0.852	1.081	0.478	2.444
Employed (Ref)	…........	…........	…........	…........	…........	…........
Living Arrangements						
Not as a couple	0.309	0.057	0.000*	1.362	1.218	1.524
Live in a couple (Ref)	…........		…........	…........	…........	…........
Contraceptive Use						
Yes	0.162	0.054	0.003*	1.176	1.058	1.308
No (Ref)	…........	…........	…........	…........	…........	…........
Children						
None (Ref)	…........	…........	…........	…........	…........	…........
One	0.127	0.068	0.061	1.135	0.994	1.296
>=2	0.538	0.072	0.000*	1.712	1.487	1.972
Previous Abortions						
None (Ref)	…........	…........	…........	…........	…........	…........
One	0.110	0.190	0.564	1.116	0.769	1.620
>=2	-0.281	0.207	0.174	0.755	0.503	1.132
Year						
2011 (Ref)	…........	…........	…........	…........	…........	…........
2012	-0.173	0.543	0.751	0.841	0.290	2.441
2013	-1.305	0.473	0.006*	0.271	0.107	0.686
2014	-1.608	0.476	0.001*	0.200	0.079	0.509
2015	-1.645	0.472	0.000*	0.193	0.076	0.487
2016	-1.515	0.488	0.002*	0.220	0.085	0.572
2017	-1.226	0.494	0.013*	0.293	0.111	0.773
Interactions**						
*Year*Employment*						
2012*Student	-1.098	0.478	0.022*	0.333	0.131	0.851
*Year*Education*						
2017*First Level or Below	1.119	0.501	0.026*	3.063	1.146	8.184
*Year*Previous Abortion*						
2016*One	0.535	0.257	0.038	1.707	1.031	2.827
2016*>=2	0.667	0.287	0.020*	1.949	1.110	3.422
Constant	3.097	.410	0.000	22.138	…........	…........

N	23206
-2LL	11565.507
R2	0.014
Adjusted R2	0.036

*p<.05; ** only statistically significant values are included in the table;
CI: Confidence Interval

Table 4.10: Regression estimates showing predictors of elective abortions among Spanish women

Characteristics	Coefficient (β)	S.E of estimates β	p-values	Odds ratio	95% CI	
Age at time of IA						
<25	0.936	0.021	0.000*	2.551	2.446	2.660
25-34	0.596	0.015	0.000*	1.816	1.763	1.870
>=35 (Ref)	…........	…........	….........	….........	….........	…........
Education						
First Level or below	0.100	0.056	0.077	1.105	0.989	1.234
Compulsory Secondary	0.356	0.051	0.000*	1.427	1.292	1.577
Non-Compulsory	0.449	0.051	0.000*	1.567	1.418	1.732
University (Ref)	…........	…........	….........	….........	….........	…........
Employment Status						
Unemployed	0.067	0.042	0.117	1.069	0.984	1.162
Student	-0.085	0.065	0.190	0.919	0.809	1.043
Employed (Ref)	…........	…........	….........	….........		
Living Arrangements						
Not as a couple	1.232	0.044	0.000*	3.430	3.148	3.737
Live in a couple (Ref)	…........		….........	….........	….........	…........
Contraceptive Use						
Yes	1.080	0.036	0.000*	2.944	2.741	3.161
No (Ref)	…........	…........	….........	….........	….........	…........
Children						
None (Ref)	…........	…........	….........	….........	….........	….........
One	0.199	0.044	0.000*	1.220	1.119	1.330
>=2	1.339	0.055	0.000*	3.816	3.424	4.254
Previous Abortions						
None (Ref)	…........	…........	….........	….........	….........	….........
One	0.551	0.051	0.000*	1.735	1.569	1.918
>=2	0.584	0.079	0.000*	1.793	1.537	2.092
Year						
2011 (Ref)	…........	…........	….........	….........	….........	….........
2012	0.110	0.065	0.088	1.116	0.984	1.267
2013	0.170	0.063	0.007*	1.185	1.048	1.341
2014	-0.174	0.062	0.005*	0.841	0.745	0.949
2015	-0.190	0.062	0.002*	0.827	0.733	0.933
2016	-0.007	0.062	0.905	0.993	0.879	1.120
2017	-0.024	0.061	0.698	0.976	0.866	1.101
Interactions*						
*Year*Education*						
2014*First Level or Below	0.252	0.077	0.001*	1.284	1.106	1.498
2015*First Level or Below	0.425	0.082	0.000*	1.530	1.303	1.796
2016*First Level or Below	0.497	0.083	0.000*	1.643	1.397	1.934
2017*First Level or Below	0.289	0.081	0.000*	1.335	1.138	1.566
*Year*Employment*						
2017*Student	-0.259	0.085	0.002*	0.772	0.653	0.911
*Year*Living Arrangement*						
2013*Not as Couple	-0.234	0.057	0.000*	0.792	0.708	0.886
2016*Not as Couple	-0.232	0.059	0.000*	0.793	0.707	0.889
2017*Not as Couple	-0.244	0.058	0.000*	0.783	0.699	0.878
*Year*Contraceptive Use*						
2013*Yes	-0.503	0.048	0.000*	0.605	0.550	0.664
2014*Yes	-0.292	0.048	0.000*	0.747	0.680	0.821
2015*Yes	-0.132	0.049	0.007*	0.876	0.796	0.965
2016*Yes	-0.143	0.050	0.004*	0.867	0.786	0.955
*Year*Children*						
2014*One	0.149	0.059	0.011*	1.160	1.034	1.302
2015*One	0.132	0.060	0.027*	1.141	1.015	1.282
2013*>=2	-0.239	0.072	0.001*	0.787	0.683	0.907
2016*>=2	-0.317	0.074	0.000*	0.729	0.631	0.842
2017*>=2	-0.270	0.073	0.000*	0.758	0.657	0.875
*Year*Previous Abortion*						
2013*One	-0.136	0.660	0.041*	0.873	0.766	0.994
2013*>=2	-0.245	0.100	0.014*	0.782	0.643	0.952

Constant	0.312	0.024	0.000	1.173	……….	……….
N			345269			
-2LL			186439.628			
R2			0.066			
Adjusted R2			0.145			

*p<.05; ** only statistically significant values are included in the table; CI: Confidence Interval

In addition, among Spanish, women the effect of education on elective abortions was found to vary by year. In this regard, a significant difference was observed in the years 2014-2017 compared with 2011. Compared with 2011, in 2014-2017, those with the lowest levels of education were more likely than those with university level education to have had an elective abortion, with the following odds observed: ($OR_{2016(1stLevel)}$ = 1.643; p =0.000; $OR_{2014(1stLevel)}$ = 1.530; p =0.000; $OR_{2017(1stLevel)}$ = 1.335; p =0.000; $OR_{2014(1stLevel)}$ = 1.284; p =0.001). The association between education and the likelihood of an elective abortion also varied with time among African women, but only in 2017, with respect to first level education. Compared with 2011, in 2017, those with the lowest levels of education were three times as likely as those with university level education to have had an elective abortion ($OR_{2017(1stLevel)}$ = 3.063; p =0.026).

Employment status was found to significantly contribute to the models among women from the EU-West and Global North, Asia/Oceania and Latin America and the Caribbean, but not among women from Eastern Europe, Africa and Spain. Among women from Asia/Oceania and Latin America, a significant association was only observed among the unemployed compared with the employed, and in both cases, the unemployed were less likely to have had an elective abortion ($OR_{Asiaunemployed}$= 0.827; p=0.000; $OR_{LACunemployed}$= 0.822; p=0.010). Among women from the EU-West and Global North, a significant association was only observed among students compared with the employed, with students having a lower likelihood of an elective abortion (OR =0.639; p=0.000). Additionally, among women from Latin America and the Caribbean, it was observed that the effect of employment status on the likelihood of an abortion varied with time, but a significant difference was only observed among unemployed women in the years 2013 and 2015. A greater likelihood of an elective abortion was observed among unemployed women as compared with employed women in 2013 (OR_{2013} =1.369; p=0.002) and 2015 (OR_{2015} =1.337; p=0.008) than in 2011. As well, among Spanish and African women, the effect of employment status on the likelihood of an abortion varied with time, but a significant difference was only observed 2017

121

(Spanish) and 2012 (Africans) with respect to students. Compared with 2011, Spanish women in 2017, and African women in 2012, who were students, were less likely than those employed to have had an abortion in ($OR_{Spanish2017}$ =0.772; p=0.002; $OR_{African2012}$ =0.333; p=0.022).

Couple status did not contribute significantly to the model in the case of women from Asia/Oceania and those from Latin America and the Caribbean. In order of significance, among women from Spain (OR =3.430; p= 0.000), EU-West and Global North (OR = 1.931; p=0.000), Africa (OR = 1.362; p=0.000), and Eastern Europe (OR =1.169; p=0.000), not being in a couple was associated with a greater likelihood of an elective abortion, than being in a couple. Additionally, among Spanish women the effect of couple status (living arrangement) on the likelihood of an elective abortion varied with time, but a significant difference was only observed in the years 2013 and 2016 – 2017. Spanish women who did not live in a couple were less likely than those who lived in a couple to have had an abortion in 2016 (OR_{2016} =0.793; p=0.000); 2013 (OR_{2013} =0.792; p=0.000) and 2017 (OR_{2017} =0.783; p=0.000), than in 2011.

Contraceptive use was found to be a statistically significant predictor of an elective abortion in all cases, with increased odds of an elective abortion among those who use contraceptives, compared with those who do not. In order of significance the odds ratios were, (OR_{Spain} 2.944; p=0.000; OR_{Asia} 1.815; p=0.010; $OR_{EU-WestGlobalNorth}$ = 1.698; p=0.022; $OR_{EasternEurope}$ 1.356; p=0.000; OR_{LAC} =1.280; p=0.000; OR_{Africa} = 1.176; p=0.003). However, once the effect of time was contemplated, it was observed that among women from Latin America and the Caribbean, there was a lesser likelihood of an elective abortion among contraceptive users as compared with non-users, in 2016 (OR_{2016} =0.808; p=0.022), 2015 (OR_{2015} =0.719; p=0.000), (OR_{2012} =0.717; p=0.000), (OR_{2014} =0.681; p=0.000), (OR_{2013} =0.644; p=0.000), than in 2011. A similar finding of the effect of contraceptive use on the likelihood of an abortion varying with time was observed among Spanish women but a significant difference was only observed in the years 2013 – 2016. A lesser likelihood of an elective abortion was observed among Spanish women who used contraceptives as compared with those who did not, in 2015 (OR_{2015} =0.876; p=0.007), 2016 (OR_{2016} =0.867; p=0.004), 2014 (OR_{2014} =0.747; p=0.000), (OR_{2013} =0.605; p=0.000), than in 2011.

Number of children and number of previous abortions both made statistically significant contributions to the models among all groups of women, except previous abortions in the case of women from Africa. With the exception of previous abortions among women from Asia/Oceania, wherein decreased odds were observed, in all cases, having children and previous abortions was associated with increased odds of an elective abortion. Among women from Spain, Eastern Europe, Asia/Oceania and Latin America and the Caribbean, the odds were greater among those with two or more children, than those with one child ($\text{OR}_{\text{Spanish}>=2}$ =3.816; p=0.000; $\text{OR}_{\text{SpanishOne}}$ = 1.220; p=0.000; $\text{OR}_{\text{EastEU}>=2}$ =1.979; p=0.000; $\text{OR}_{\text{EastEUOne}}$ = 1.498; p=0.000; $\text{OR}_{\text{Asia}>=2}$ =2.164; p=0.000; $\text{OR}_{\text{AsiaOne}}$ = 1.424; p=0.000; $\text{OR}_{\text{LAC}>=2}$ =1.205; p=0.000; $\text{OR}_{\text{LACOne}}$ = 1.088; p=0.012). Among women from the EU-West and Global North and Africa, significant differences were only observed when women with two or more children were compared with those with no children ($\text{OR}_{\text{EU-West}>=2}$ =2.175; p=0.000; $\text{OR}_{\text{Africa}>=2}$ =1.712; p=0.000). Among women from Spain and Latin America and the Caribbean, the odds of an elective abortion were greater among those with two or more previous abortions than those with one ($\text{OR}_{\text{Spanish}>=2}$ =1.793; p=0.000; $\text{OR}_{\text{SpanishOne}}$ = 1.735; p=0.000; $\text{OR}_{\text{LAC}>=2}$ =1.150; p=0.000; $\text{OR}_{\text{LACOne}}$ = 1.133; p=0.000). Among women from the EU-West and Global North (OR = 1.644; p= 0.000) and Eastern Europe (OR = 1.143; p= 0.003), a significant difference was only observed when those with one previous abortion was compared to those with none. Among women from Asia/Oceania, for whom decreased odds of an elective abortion was observed among those with previous abortions compared those without, the odds were lowest among women with two or more previous abortions ($\text{OR}_{\text{AsiaOne}}$ = 0.768; p=0.000; $\text{OR}_{\text{Asia}>=2}$ =0.700; p=0.000).

Additionally, among Spanish women, the effect of number of children on the likelihood of an abortion varied with time. A lesser likelihood of an elective abortion was observed among Spanish women who had two or more children as compared with those who did not have children, in 2013 (OR_{2013} =0.787; p=0.001), 2017 (OR_{2017} =0.758; p=0.000), and 2016 (OR_{2016} =0.729; p=0.000), than in 2011. On the contrary, Spanish women who had one child as compared with those who did not have children, had a greater likelihood of an elective abortion in 2014 (OR_{2014} =01.160; p=0.011) and 2015 (OR_{2015} =01.141; p=0.027) than in 2011. In addition, among Spanish women and those from Africa, the effect of number of previous abortions on the likelihood of an elective abortion, varied with time. In comparison with 2011, in 2016, African women with two or more

previous abortions ($OR_{2016>=2}$ =1.949; p=0.000) followed by those with one previous abortion ($OR_{2016One}$ =1.707; p=0.038), had a greater likelihood of an elective abortion than those who had no previous abortions. Compared with 2011, Spanish women with one previous abortion ($OR_{2013One}$ =0.873; p=0.041) followed by those with two previous abortions ($OR_{2013>=2}$ =0.782; p=0.000) displayed a lesser likelihood of an elective abortion than those with no previous abortion of an elective abortion in 2013.

Year contributed significantly to the models among all groups of women. In comparison with 2011, there was a lesser likelihood of an elective abortion in all subsequent years, except among Spanish women in 2013. Among African women, significant associations were observed between 2013-2017 (OR_{2017} = 0.293; p=0.013; OR_{2013} = 0.271; p=0.006; OR_{2016} =0.220; p=0.000; OR_{2014} = 0.200; p=0.000; OR_{2015} = 0.193; p=0.000). The odds ratios represent decreases ranging between 71% to 80% between 2011 and 2017. Significant observations between 2013-2017 was observed among women from Eastern Europe (OR_{2017} = 0.606; p=0.000; OR_{2016} = 0.603; p=0.000; OR_{2013} =0.541; p=0.000; OR_{2015} = 0.529; p=0.000; OR_{2014} = 0.474; p=0.000). The odds ratios represent decreases ranging between 39% to 46% between 2011 and 2017. Among women from Latin America and the Caribbean, significant associations were observed between 2013-2017 (OR_{2014} = 0.687; p=0.001; OR_{2013} = 0.664; p=0.000; OR_{2015} =0.596; p=0.000; OR_{2017} = 0.566; p=0.000; OR_{2016} = 0.568; p=0.000). The odds ratios represent decreases ranging between 31% to 44% between 2011 and 2017. Among women from the EU-West and Global North, statistically significant differences were only observed between 2013 - 2015 (OR_{2015} = 0.718; p=0.044; OR_{2014} = 0.629; p=0.004; OR_{2013} =0.565; p=0.000). The odds ratios represent decreases ranging between 28% to 44% between 2011 and 2017. Among Asian/Oceanic women, a lower likelihood of an elective abortion was observed in 2013 and 2014 when compared to 2011 (OR_{2014} = 0.723; p=0.032; OR_{2013} = 0.673; p=0.008). The odds ratios represent decreases ranging between 28% to 33% between 2011 and 2017. Similar results were observed among women from Spain from 2014-2015 (OR_{2014} = 0.723; p=0.032; OR_{2013} = 0.673; p=0.008), except that the odds of an elective abortion among these women were greater in 2013 than 2011 (OR_{2013} = 1.185; p=0.007). The lower odds ratios represent decreases ranging between 16% to 19% between 2011 and 2017.

4.5 Discussion

We set out to investigate for the first time in Spain, to the best of our knowledge, some of the factors most attributable to the likelihood of an elective abortion among resident women and the variations, if any, based on nationality and time, having regard to different legal developments within the country. We found that, with a few exceptions, the socio-demographic factors supporting the abortion decision are common across different nationality groups, and that they have remained largely unchanged over time, between 2011-2017, seven years after the introduction of Organic Law 2010. Age, education status, employment status, living arrangement, number of children, number of previous abortions, and nationality status were all found to relate to the likelihood of an elective abortion. The direction and magnitude of the effects of these variables on the risk of an elective abortion, however, were found to vary based on nationality, and occasionally over time. These findings are generally consistent with the existing literature on overall abortions (Senso, Rodríguez and Arenas, 2022; Ruiz-Ramos et al., 2012) which have found little variation, based on country of origin, in the characteristics and factors associated with an abortion.

Consistent with the existing literature on general abortions, our results show that generally being younger, that is less than 35 years (Zurriaga et al. 2009; Ruiz-Ramos et al., 2012), less educated (Perez et. Al, 2014; Font-Ribera et al. 2008), not being in a couple (Ruiz-Ramos et al., 2012), having children (Senso, Rodríguez and Arenas, 2022; Ruiz-Ramos et al., 2012; Zurriaga et al. 2009), having had previous abortions and being a migrant (Ruiz-Ramos et al., 2012; Zurriaga et al. 2009) are all factors associated with a greater likelihood of an elective abortion. Contraceptive use was also generally found to be associated with increased odds of an elective abortion. There were some notable deviations from these patterns, however.

Among all groups, except women from Asia/Oceania for whom no significant association was observed, and under 25-year-olds from Latin America who had a lower risk of an abortion than those 35 years and above, being younger (less than 35 years) was found to be associated with a greater risk of abortion. As explicated in one study, abortion decisions are affected by one's phase in the life cycle (Zurriaga et al., 2009; Sihvo et al., 2003). Accordingly, among younger women, the postponement of maternity to accommodate the completion of studies or the commencement

of work are reasons for having an abortion. Among those older, the abortion decision is linked to family situation, work situation and the lack of desire for more children (Zurriaga et al., 2009; Senso, Rodríguez and Arenas, 2022). One US study has suggested that women over 35 years have fewer abortions than women in younger age groups because older women have achieved their desired family size and are protected by more effective family planning such as sterilization as compared with younger women (Henshaw and O'Reilly, 1983).

Whilst we generally found lower levels of education to be associated with a higher risk of an elective abortion, which is consistent with most of the literature on education and abortions (Gonzalez-Rabago et al., 2017; Rasch et al. 2007; Zurriaga et al. 2009; Font-Ribera et al., 2007), mixed results were observed relative to which level of education is mostly associated with higher risks. This mixed pattern is consistent with the literature on general abortions for which varied results have been found regarding education and general abortion decisions. In that, other studies have found relative to the general abortion decisions, that those with lower levels of education (Pérez et al., 2014; Ferrer 2012), those with medium level of education (Ruiz-Ramos et al., 2012), and those with higher levels of education (Uria and Mosquera, 1999; Llácer Gil de Ramales et al. 2006) have a greater risk of an abortion. In one study, it is explained that education level in the abortion analysis does not usually exhibit the gradient of inequality, hence the mixed results observed (Senso, Rodríguez and Arenas, 2022). Moreover, it is suggested that the mixed results are attributable to the correlation between education and other factors in shaping the abortion decision, as have been explained in other Spanish studies (Gonzalez-Rabago et al., 2017). One study from Italy has found for example that the association between the abortion decision and education is dependent on age and partner status and cohabitation (Bettarini 1996; Zurriaga et al., 2009; Font-Ribera et al., 2007), while another Spanish study has found education to be associated with abortions among those youngest, but not others (Ferrer, 2012).

The effect of employment status on the risk of abortion was found to vary based on nationality, with a significant association found only among women from EU-West and Global North, Asian/Oceanic women, and those from Latin America and the Caribbean. Among women from Asia/Oceania and Latin America and the Caribbean, the unemployed were less likely than the employed to have had an elective abortion. Among women from the EU-West and Global North,

students were less likely than the employed to have an elective abortion. These finding do not fit within the general narrative espoused in the literature which suggests that lower socio-economic status is generally associated with an increased risk of abortion (Zurriaga et al. 2019; Font-Ribera et al., 2008; Rodriguez-Alvarez et al. 2016; Rasch et al. 2007). In fact, one study from Denmark found the unemployed, unskilled, and students to have higher risk of abortion (Rasch et al. 2007), whilst another from Spain found similar results (Zurriaga et al. 2009). It is suggested that the contrary results are likely attributable to a desire among these women to put off childbearing in order to accomplish career goals. In fact, studies have noted that while unemployment is generally characteristic of those who have an abortion, there are case where women resort to an abortion to maintain job opportunities, be it young persons at the beginning of their careers or older ones trying to secure positions which could be lost due to motherhood (Senso, Rodríguez and Arenas, 2022; Sihvo et al., 2003)

Couple status was found to be a significant predictor of an elective abortion among women from all nationalities, except those from Asia/Oceania and Latin America and the Caribbean. In all cases, consistent with other studies on general abortions, those not living in a couple were more likely to have had an elective abortion (Llácer Gil de Ramales et al. 2006; Senso, Rodríguez and Arenas, 2022; Rasch et al. 2007; Ferrer, 2012). This finding is likely explained by a greater likelihood of unintended pregnancies among those unpartnered and the lack of desired level of social security to go through with childbearing. As explicated in other studies, and stated earlier, abortion decisions are affected by one's phase in the life cycle and abortion is sometimes chosen, especially among older women, when partnership is unstable (Zurriaga et al., 2009; Sihvo et al., 2003; Ferrer, 2012). Indeed, not being partnered is one such phase more likely to be associated with a lesser desire for children. Regarding contraceptive use, we found that across all nationalities, except women from Asia/Oceania (for whom no statistically significant association was found), contraceptive use was associated with a greater likelihood of an elective abortion. This finding suggests failed family planning methods. The finding is likely attributable to what one study has suggested, that a significant proportion of women who use contraceptives become pregnant likely due to incorrect use or ineffective means of contraceptives (Purcell et al., 2017)

We found that number of children has a significant effect on the likelihood of an elective abortion among all nationalities. In all cases, having children (one, or >=2) was found to be associated with increased odds of an elective abortion. This is a logical finding which suggests in part, as explained in one US study, that once the desired family size is achieved, then women are more likely to have an abortion (Henshaw and O'Reilly, 1983). One Spanish study has found number of children to be the strongest predictor of abortion outcomes and suggests that it could be related to insufficient resources to plan and decide on family size, due to the greater likelihood of unwanted pregnancies among those with children (Ruiz-Ramos et al., 2012). In fact, we found that generally, as the number of children increased, the odds of abortion were higher.

Number of previous abortions was also found to be associated with increased odds of an elective abortion, except among women from Africa. Generally, having previous abortions (1 or >=2) was associated with greater odds of an elective abortion, with the highest odds among those with two or more abortions. This finding of a positive association is consistent with the literature and is likely explained by the exposure to abortion effect, as suggested by one US study (Jones et al., 2018). Interestingly, among women from Asia/Oceania, the opposite finding was true, such that previous abortions were found to be associated with a lesser likelihood of an elective abortion. Plausibly, this could be explained by better access to health promotion and family planning information among those with previous abortions and are therefore those women are now more knowledgeable about unwanted pregnancy prevention.

With respect to nationality, we found similar results to previous studies on abortions, that is, as compared to Spanish nationals, there was a greater likelihood of an elective abortion among migrant women (Zurriaga et al., 2009; Rodriguez-Alvarez et al.,2016; Ruiz-Ramos et al, 2012; Senso, Rodríguez and Arenas, 2022; Gispert et al., 2018), albeit significant associations were only observed among women from the EU-West and Global North, Eastern Europe and Africa. One study has suggested that, in part, these findings are explained by the differences in the socio-demographic characteristics between migrants and natives, with generally higher number of previous children and greater proportions partnered, thus greater family burden could be a determining factor of abortions, as well as lack of information or access to contraceptive means (Gispert et al., 2018). We note however, that while we found a greater risk of elective abortions in

migrants, irrespective of nationality, even with respect to migrants from higher income countries such as the EU-West and Global North, there were some variabilities in the socio-demographic characteristics regarding elective abortions among different groups of migrants and natives. Among women from Latin America, Spain and the EU-West and Global North, a greater proportion of women who had abortions used contraceptives, but not among the other groups of women. Among women from Spain and the EU-West and Global North, a greater proportion of women had no children, while the opposite was true among other groups of women. The finding of a greater risk of abortions among migrants, even with different socio-demographic profiles, suggests as one author has explained, that migration itself influences the risk of an abortion (Ruiz-Ramos et al., 2012). Notably as well, the likelihood of an elective abortion was highest among women from the EU-West and Global North, followed by those from Africa and Eastern Europe, while another study found the highest risk among Africans, but that study only included data for the period between 2007-2010 and therefore did not assess the medium to long-term effects of the law on abortion outcomes (Ruiz-Ramos et al., 2012). In our previous chapter, we also found stronger increases in overall abortions among women from the EU-West and Global North (although they maintained low rates), suggesting that there may be greater access to abortions among these women as compared with other groups of migrants.

Finally, we found that since the introduction of Organic Law in 2/2010, the likelihood of elective abortions has decreased over the period examined, compared with our baseline year of 2011. The decreases were stronger among migrants as compared with natives. The strongest decreases were observed among women from Africa and from Eastern Europe. These findings are consistent with the findings in Chapter 3, which shows stronger decreases in general abortions among these group of women. We found that in some limited cases, the relationships observed between our socio-demographic factors and the likelihood of an elective abortion varied over time, with respect to different nationalities, as well as different variables. This suggests the importance of continued monitoring of factors affecting abortion likelihood, as with time, they are likely to change or be modified. In fact, one study on abortion outcomes concluded that while there is consensus on higher abortion rates among migrants, no such conclusion is formed regarding the socio-demographic characteristics affecting abortion (Gispert et al., 2018). On the contrary, more recent studies have found that there are common socio-demographic factors supporting the decision to

abort (Senso, Rodríguez and Arenas, 2022, Ruiz-Ramos et al. 2012). However, with some, albeit small variations in the associations observed in this study over time, it remains to be seen whether a general conclusion can be drawn. Notwithstanding, largely, our findings show that time did not affect factors affecting the likelihood of an elective abortion.

Overall, we found that the factors affecting the likelihood of an elective abortion are similar to the factors affecting the likelihood of general abortions, explicated in previous studies. This is an unsurprising finding as prior to law change, nearly 95% or more of women, recorded an abortion for mental health reasons, and since the law change, relatively the same proportions recorded elective abortions, even though medical reasons remain a viable option. It appears therefore that prior to the introduction of the law, mental health reasons provided a loophole to obtain what would otherwise have been an elective abortion. In this regard, the mental health reasons prior to the law reform appear to have been used by women as akin to an elective abortion. It is suggested that it is for these reasons the factors affecting abortions and elective abortions do not seem to vary much. There are limitations in this study. The cross-sectional study-design as employed in this study is insufficient to critically examine causality. It is likely that the factors associated with the likelihood of elective abortions vary with duration of residence among migrants, but that was not accounted for in this study.

4.6 Conclusion

In this study, we build on previous research by addressing elective abortions, adding a time dimension, extending the study to the entire country, including a number of nationality groupings. In addition, we have included previous number of abortions as a predictor variable, which has generally been missing from the analysis. We found that the factors affecting the likelihood of an elective abortion do not generally vary across nationalities nor, with a few exceptions, do they generally vary over time. However, there are notable differences in the effect of these factors on different groups of women, likely attributable to the composition of the different groups and their socio-demographic characteristics. Our results show that generally being younger (less than 35 years), less educated, not being in a couple, having children, having had previous abortions, contraceptive use, and being a migrant, are all factors associated with a greater likelihood of an elective abortion. We also found that since the introduction of the law, there appears to be lower

odds of elective abortions, in comparison with baseline year 2011, exactly one year after the law change. This is generally consistent with the lower rates of abortions that were found in chapter 3. However, further studies are needed to help explain the lower risks observed, as we also know from our prior chapter, that the rates of abortions increased over time for some group of migrants, although not significantly so.

References

Alvarez-Nieto, C., Pastor-Moreno, G., Grande-Gascón, M.L. and Linares-Abad, M. (2015). Sexual and reproductive health beliefs and practices of female immigrants in Spain: a qualitative study. *Reproductive Health*, 12(1). doi:10.1186/s12978-015-0071-2.

Anne VAN LANCKER (2015). *Report on sexual and reproductive health and rights - Committee on Women's Rights and Equal Opportunities | A5-0223/2002 | European Parliament*. [online] Europa.eu. Available at: https://www.europarl.europa.eu/doceo/document/A-5-2002-0223_EN.html [Accessed 8 Dec. 2022].

Bettarini, S.S. and D'Andrea, S.S. (1996). Induced Abortion in Italy: Levels, Trends and Characteristics. *Family Planning Perspectives*, 28(6), p.267. doi:10.2307/2136056.

Carmona, R., Alcázar-Alcázar, R., Sarria-Santamera, A. and Regidor, E. (2014). Use of health services for immigrants and native population: a systematic review. *Revista espanola de salud publica*, [online] 88(1), pp.135–55. doi:10.4321/S1135-57272014000100009.

Fernandez, M.A.L., Cavanillas, A.B. and de Mateo, S. (2010). Differences in the reproductive pattern and low birthweight by maternal country of origin in Spain, 1996-2006. *The European Journal of Public Health*, [online] 21(1), pp.104–108. doi:10.1093/eurpub/ckp224.

Ferrer, L (2012). Lògiques socials i decisions individuals de la interrupció voluntària del l'embaràs: espanya a través d'una perspectiva comparada. Centre d'Estudis Demogràfics, Universitat Autònoma de Barcelona

Font-Ribera, L., Pérez, G., Salvador, J. and Borrell, C. (2007). Socioeconomic Inequalities in Unintended Pregnancy and Abortion Decision. *Journal of Urban Health*, [online] 85(1), pp.125–135. doi:10.1007/s11524-007-9233-z.

Gispert Magarolas, R., Clot-Razquin, G., Torné, M. del M., Bosser-Giralt, R. and Freitas-Ramírez, A. (2008). Diferencias en el perfil reproductivo de mujeres autóctonas e inmigrantes residentes en Cataluña. *Gaceta Sanitaria*, [online] 22(6), pp.574–577. Available at: https://scielo.isciii.es/scielo.php?script=sci_arttext&pid=S0213-91112008000600011 [Accessed 17 Dec. 2022].

González de Chávez Fernández, M. A. (2015). El aborto: un abordaje bio-psico-social. *Dilemata*, (17), 1–21. Recuperado a partir de https://www.dilemata.net/revista/index.php/dilemata/article/view/344

González-Rábago, Y., Rodriguez-Alvarez, E., Borrell, L.N. and Martín, U. (2017). The role of birthplace and educational attainment on induced abortion inequalities. *BMC Public Health*, 17(1). doi:10.1186/s12889-016-3984-y.

Hansen, M.-L.H., Mølgaard-Nielsen, D., Knudsen, L.B. and Keiding, N. (2009). Rates of induced abortion in Denmark according to age, previous births, and previous abortions. *Demographic Research*, [online] 21, pp.647–680. Available at: http://www.jstor.org/stable/26349358 [Accessed 30 Nov. 2022].

Henshaw, S.K. and O'Reilly, K. (1983). Characteristics of Abortion Patients in the United States, 1979 and 1980. *Family Planning Perspectives*, 15(1), p.5. doi:10.2307/2134534.

Hernando Rovirola, C., Ortiz-Barreda, G., Galán Montemayor, J.C., Sabidó Espin, M. and Casabona Barbarà, J. (2014). Infección VIH/Sida y otras infecciones de transmisión sexual en la población inmigrante en España: revisión bibliográfica. *Revista Española de Salud Pública*, 88(6), pp.763–781. doi:10.4321/s1135-57272014000600009.

Hernández Quevedo, C. and Jiménez Rubio, D. (2009). Las diferencias socioeconómicas en salud entre la población española y extranjera en España: evidencia de la Encuesta Nacional de Salud. *Gaceta Sanitaria*, 23, pp.47–52. doi:10.1016/j.gaceta.2009.07.009.

Hernando Rovirola, C., Ortiz-Barreda, G., Galán Montemayor, J.C., Sabidó Espin, M. and Casabona Barbarà, J. (2014). Infección VIH/Sida y otras infecciones de transmisión sexual en la población inmigrante en España: revisión bibliográfica. *Revista Española de Salud Pública*, 88(6), pp.763–781. doi:10.4321/s1135-57272014000600009.

Keygnaert, I., Guieu, A., Ooms, G., Vettenburg, N., Temmerman, M. and Roelens, K. (2014). Sexual and reproductive health of migrants: Does the EU care? *Health Policy*, [online] 114(2-3), pp.215–225. doi:10.1016/j.healthpol.2013.10.007.

Knudsen, L.B., Rasch, V. and Gammeltoft, T. (2006). Recourse to induced abortion among native and foreign women in Denmark: A Study of Social Vulnerability and the choice of Induced Abortion. *vbn.aau.dk*. [online] Available at: https://vbn.aau.dk/en/publications/recourse-to-induced-abortion-among-native-and-foreign-women-in-de [Accessed 8 Dec. 2022].

Llácer Gil de Ramales, A., Morales Martín, C., Castillo Rodríguez, S., Mazarrasa Alvear, L. and Martínez Blanco, M.L. (2006). El aborto en las mujeres inmigrantes. Una perspectiva desde los profesionales sociosanitarios que atienden la demanda en Madrid. *Index de Enfermería*, 15(55). doi:10.4321/s1132-12962006000300003.

Pellico-López, A., Paz-Zulueta, M., Manjón-Rodríguez, J.B., Sánchez Movellán, M., Ajo Bolado, P., García-Vázquez, J., Cayón-De Las Cuevas, J. and Ruiz-Azcona, L. (2022). Evolution of Legislation and the Incidence of Elective Abortion in Spain: A Retrospective Observational Study (2011-2020). *International Journal of Environmental Research and Public Health*, [online] 19(15), p.9674. doi:10.3390/ijerph19159674.

Pérez, G., Rodríguez-Sanz, M., Domínguez-Berjón, F., Cabeza, E. and Borrell, C. (2014). Indicadores para monitorizar la evolución de la crisis económica y sus efectos en la salud y en las desigualdades en salud. Informe SESPAS 2014. *Gaceta Sanitaria*, 28(Suppl 1), pp.124–131. doi:10.1016/j.gaceta.2014.03.009.

Purcell, C., Riddell, J., Brown, A., Cameron, S., Melville, C., Flett, G., Bhushan, Y. and McDaid, L. (2017). Women's experiences of more than one termination of pregnancy within two years: a mixed-methods study. *BJOG: An International Journal of Obstetrics & Gynaecology*, 124(13), pp.1983–1992. doi:10.1111/1471-0528.14940.

Rasch, V., Gammeltoft, T., Knudsen, L.B., Tobiassen, C., Ginzel, A. and Kempf, L. (2007). Induced abortion in Denmark: effect of socio-economic situation and country of birth. *The European Journal of Public Health*, 18(2), pp.144–149. doi:10.1093/eurpub/ckm112.

Rodriguez-Alvarez, E., Borrell, L.N., González-Rábago, Y., Martín, U. and Lanborena, N. (2016). Induced abortion in a Southern European region: examining inequalities between native and immigrant women. *International Journal of Public Health*, 61(7), pp.829–836. doi:10.1007/s00038-016-0799-7.

Ruiz-Ramos, M., Ivañez-Gimeno, L. and García León, F.J. (2012). Características sociodemográficas de la interrupción voluntaria del embarazo en Andalucía: diferencias entre población autóctona y extranjera. *Gaceta Sanitaria*, 26(6), pp.504–511. doi:10.1016/j.gaceta.2011.11.017.

Senso, S.G., Rodríguez, M.C. and Arenas, M.Á.R. (2022). Factors related to the voluntary interruption of pregnancy in Spain. *Journal of Preventive Medicine and Hygiene*, [online] 63(1), pp.E69–E69. doi:10.15167/2421-4248/jpmh2022.63.1.2299.

Sihvo, S. (2003). Women's life cycle and abortion decision in unintended pregnancies. *Journal of Epidemiology & Community Health*, 57(8), pp.601–605. doi:10.1136/jech.57.8.601.

United Nations Entity for Gender Equality and the Empowerment of Women (UN Women) (2019). *Beijing Declaration and Platform for Action, Beijing +5 Political Declaration and Outcome*. [online] UN Women. Available at: https://www.unwomen.org/en/digital-library/publications/2015/01/beijing-declaration [Accessed 20 Dec. 2022].

Uria, M. and Mosquera, C. (1999). Legal abortion in Asturias (Spain) after the 1985 law: sociodemographic characteristics of women applying for abortion. *European Journal of Epidemiology*, 15(1), pp.59–64. doi:10.1023/a:1007541904470.

Vidal-Coso, E. and Miret-Gamundi, P. (2014). The labour trajectories of immigrant women in Spain: Are there signs of upward social mobility? *Demographic Research*, 31(Article 13), pp.337–380. doi:10.4054/demres.2014.31.13.

Zurriaga, O., Martínez-Beneito, M.A., Galmés Truyols, A., Torne, M.M., Bosch, S., Bosser, R. and Portell Arbona, M. (2009). Recourse to induced abortion in Spain: profiling of users and the influence of migrant populations. *Gaceta Sanitaria*, [online] 23 Suppl 1, pp.57–63. doi:10.1016/j.gaceta.2009.09.012.

CHAPTER 5

5.1 Discussion

In this study, using the case of Spain, we assessed the importance and impact of laws in advancing the right to health agenda, particularly, sexual and reproductive health rights. The right to health agenda contemplated in international human rights law, explicitly links health with laws and policies, in order to ensure equality and equity in health. In this regard, the WHO's "Health in all policies" approach (WHO 2018), recognizes the role of laws and policies in shaping health outcomes, disparities and determinants and calls on governments to continually, and continuously, monitor the impact of laws and policies, in order to improve health and equity and to conform to consensually agreed-upon international norms.

We started in chapter 1 with an assessment of the scope of States' obligations under international and regional law regarding the right to health, and of whether Spain breached its obligations thereunder with the implementation of RDL 16/2012. We found that Spain's domestic laws on health rights, commencing with its Constitution, are generally in line with regional and international law. While there is no explicit consensus that there is an obligation to provide access to public health care for migrants, and States can choose to apply their legislative authority to events and persons within its territory (OHCHR, 2008), we found that a human right to health framework does exist, and which requires non-discrimination in the right to health (CESR, 2000). Against this background, Spain has implemented several laws and policies geared at addressing social cohesion, equity and integration, the most notable being Organic Law 4/2000, which guaranteed universal access to primary health care irrespective of immigration status. That is, the predecessor to RDL 16/2012. Given that the international human rights framework places a positive obligation on States based on a standard of progressive realization of the right to health, on its face, the introduction of RDL 16/2012 breached the rule of progressive realization, as it was a regressive measure. However, we found that the standard is not absolute, and that it can be derogated from (CESCR, 2017). In fact, there is recognition that an economic and financial crisis can indeed impact progressive realization of the right to health (CESR, 2012). Moreover, the language of international treaty provisions, allow for a margin of appreciation within which States can set their national policies. However, there are very specific circumstances within which

progressive realization may be derogated from. While an economic crisis could be one such circumstance, the evidence shows that such a crisis does not eliminate States' human rights obligations and as such, States parties cannot avert their obligations under international treaties irrespective of the circumstances. A test has been set, wherein states intending to implement regressive measures and/or adjustments due to an economic or financial crisis, must prove that any proposed austerity measures are in line with their standing human rights obligations. In amending the rules regarding universal public access to health, Spain had a duty to ensure that the requirements set out under international human rights law was followed – including, the measure being temporary, non-discriminatory and proportionate and necessary, such that, if the action was not taken, the situation would be much worse and more human rights violation would have occurred. We found that Spain failed to meet the test, and therefore the law amounted to a breach of international law.

Among other things, domestic policies and laws upholding the right to health contemplated by international law helps to ensure equality in access to care and help to eliminate outcome disparities. Accordingly, there is implication for poorer health outcomes and health disparities when domestic laws deviate from those contained in international law, and are particularly restrictive (Juarez et al., 2019). In fact, we found support for such hypothesis in chapters 2 and 3 of this study. In chapter 2, we assessed the impact of RDL 16/2012 on self-rated health, mental health and cervical and mammogram screening. We found significant variations among different groups of nationalities in the effect of the law. Indeed, not all four health outcomes were found to worsen in the post-law period, but it is suggested that this is likely due to various measures implemented across the different regions to counter the effect of the law (Cimas et al. 2016; Bruquetas-Callejo and Perna, 2020). As well, the effect of the law may have been confounded by the effect of the economic crisis and thus difficult to disentangle. Notwithstanding, we found some evidence to suggest some impact of the law or at least to estimate an impact of the law.

With respect to self-rated health, we found a greater likelihood of poor health among women from the Global North, Spain and Northern Africa and rest Global South. Although the association was not significant among women from Northern Africa and rest Global South, when we compared the proportions reporting good health, they were lower in the post-law period as compared to the pre-

law period, suggesting a worsening of the outcome. On the contrary, we found among women from Latin America and Eastern Europe, a greater likelihood of self-rated good health in the post-law period. These findings suggest at least among the former three groups of women, a perception of a negative impact of the law. Notably, the explanation in the literature implicates socio-economic status as aiding with our understanding of self-rated health and mental health outcomes. In this regard, poorer self-rated outcomes among migrants have been found to be associated with their lower social status, and indeed, those with higher social status, such as those from Latin America have been found to have better self-rated health (Malmusi and Ortiz-Barreda, 2014; Rodriguez Alvarez et al., 2014). However, this explanation does not jibe with the poorer self-rated outcomes found among women from Spain and the Global North, nor the better outcomes found among women from Eastern Europe who were of poorer social status (education and employment situation) compared with the former two groups of women. Accordingly, it is suggested that factors moreso related the impact of the economic crisis, as opposed to the law, may help to explain the poorer self-rated health outcomes found among women from the Global North and Spain. Among women from Eastern Europe, it is likely that they have health care incentives in either Spain or their home countries and therefore did not expect to be severely affected by the law.

In addition, although women from the Global North and Spain generally fared better in terms of social status, and therefore would be expected to have better mental health outcomes, they exhibited significantly poorer outcomes in the post-law period. On the contrary, women from Latin America and Northern Africa and rest Global South had significant better mental health outcomes. A similar explanation as postulated above with respect to self-rated health may help to explain these findings among the women from the Global North and Spain. In fact, one study out of Spain has linked during the economic recession, poorer mental health outcomes to conditions of working, including precariousness (Olivia et al., 2020). Accordingly, social and economic burdens associated with the recession may likely explain these findings among these women. Relative to women from Northern Africa and the Global North however, it is suggested that social support may in part, plausibly explain the better outcomes found among these women. In that, in the post-law period, nearly 4 in 10 of these women were outside the labor force. As such, they may not have been faced with the burdens associated with working conditions during times of an economic crisis. As it relates to women from Latin America,

Generally, we found that women from Northern Africa and the rest of the Global South were the most negatively impacted by the law. In that, these women were found to have poorer health outcomes in the post-law period, except for mental health, albeit only mammogram screening was statistically significant. It is suggested that this is due to the impact of the law and the interaction of the law's application with their lower social status: they were found to have the highest proportion of lower educated, and the lowest proportion of those educated up to university level, as well as the lowest levels of employment. The intersection between the law and their social status appears to have created more barriers to access for these women. Other studies have indeed implicated socio-demographic and economic status with health outcomes, including language barriers, fear, due to being in an irregular situation, and a higher risk of social exclusion from social services (Malmusi, and Ortiz-Barreda, 2014; Vasquez, Vargas and Aller, 2014; March et al., 2018; Gotsens et al., 2015).

On the contrary, we found that women from Latin America fared well. They were the only group of women to exhibit significant improvements in all four health outcomes in the post-law period. These women were also found to be of a higher social class, with high levels of education and employment. This socio-demographic composition helps to explain the more favourable outcomes experienced by them. Moreover, Latin Americans enjoy an easier integration into the Spanish system especially based on language advantage. Our postulations find support in the literature which suggests socio-economic advantages among Latin Americans in Spain, easier integration relative to other migrant groups, and no loss of the migrant paradox effect (Connor and Massey, 2010; Lobera, 2021; Zurriaga et al. 2009).

Spanish women, those from Eastern Europe, and those from the Global North, generally remained relatively unaffected by the law change. No associations were found in respect of the two variables which directly engage the health care system, that is, mammogram screening and cervical screening. While self-rated health (Spain, Global North) and mental health (Global North) were found to be significantly worse among women from Spain and Global North, it is likely more attributable to the economic crisis than the direct impact of the law. Meanwhile the better self-rated health among women from Eastern Europe is plausibly on account of no perceived impact

of the law. It is suggested that these groups of women may have social security entitlements or other incentives not accessible to non-EU nationals, including private insurance. Because women from the EU-West and Global North were aggregated as one grouping, caution must be taken with this explanation and it is likely that if the grouping is disentangled, different results may be observed.

In chapter 3, we assessed the impact of Organic Law 2/2010 on abortion rates and trends. There was a generally higher rate of abortion found among migrants as compared to Spanish women, consistent with previous abortion studies (Zurriaga et al., 2009; Rodriguez-Alvarez et al.,2016; Ruiz-Ramos et al, 2012; Senso, Rodríguez and Arenas, 2022; Gispert et al., 2018). In fact, other studies have attributed the overall growth in abortion rates in Spain to increases in the migrant female population in Spain (Gispert et al., 2018). Once broken down by nationality however, important variations were observed as well as substantial differences across different age-groups, suggesting inequality between nationalities and among women in different ages in their ability to access abortion and meet their reproductive goals.

While abortion rates were found to be highest among women from Latin America, Asia/Oceania and Africa, it is notable that consistent decreasing trends of abortion rates in the post-law period was only observed among women from Asia/Oceania and Africa. Among Latin American women, the trends of abortion rates looked very similar to those among Spanish nationals, that is, decreasing up to about 2014 and then it started to increase. The strongest decreases in abortion rates between the pre-intervention and post-intervention period, were observed among African and Eastern European women, although not statistically significant. On the contrary, following Spanish women, those from EU-West and Global North, exhibited the strongest increases in the rates of abortions and were the only group to have a consistent upward trend in abortion rates following the law change.

These findings, like those obtained in chapter 2, implicate the impact of social vulnerability and barriers to access to health for some groups, particularly African women, who despite having high abortion rates, similar to Latin American women, experienced strong decreases in abortion rates over the period examined. One international study has linked stronger decreases in the rates of

abortion among some migrant groups to social factors and social vulnerability which creates barriers to access. (Knudsen, Rasch, and Gammeltoft, 2006). Moreover, the Spanish literature is clear that barriers to access to abortion exist, even within a liberal regulatory framework (Ostrach, 2012; Ostrach 2020; Pellico-Lopez et al., 2022), and they appear to mostly affect those most vulnerable based on the socio-economic status. Latin Americans for example, do not face the same type of language barriers as do Eastern Europeans and Africans, and they have been found, along with Spanish and Western European women, to have higher social levels (Zurriaga et al. 2009; Ostrach, 2012) and have greater linguistic proximity, which adds to them having fewer barriers than migrants from other origins, as suggested in one study (Lobera, 2021). Hence, their patterns of abortions appear more similar to Spanish women although their rates still remain much higher.

Evidently there are other factors which contribute to the substantially higher rates of abortions among Latin American women. It is suggested that it is partly determined by cultural characteristics as well having more children, thus experiencing more unwanted pregnancies (Gispert el al., 2018). Studies on global abortion rates, have noted that most abortions result from unintended pregnancies (Singh et al. 2018; Ruiz-Ramos et al., 2018). One international study on global abortion rates and trends found that in the developing world, both unintended pregnancies and abortion rates are highest among Latin Americans (Singh et al., 2018). In addition, one Spanish study has found number of children to be the strongest predictor of abortion outcomes and suggests that it could be related to insufficient resources to plan and decide on family size, due to the greater likelihood of unwanted pregnancies among those with children (Ruiz-Ramos et al., 2012). Notably, when we examined the profile of Spanish and Latin American women having an elective abortion in chapter 4, they were found to be young, single, employed and users of contraceptives, but a greater proportion of Spanish nationals have no children, whilst the opposite is true among Latin American women, validating our earlier postulations.

Moreover, RDL 16/2012 which disentitled mostly undocumented migrants from access to universal primary healthcare and which also generally tied health care access to social security entitlements, may have led to lower participation of especially, African migrants in the healthcare system, which may help to explain the general decreasing rates among African. Africans in particular, are potentially more likely to be in an irregular migrant situation and to have poorer

social outcomes as compared with other migrant groups (Zurriaga et al. 2009; Ostrach, 2012). As it relates to Eastern Europeans who also exhibited strong decreases in abortion rates, it is suggested that they too may have faced more barriers as compared to Latin Americans, but less barriers as compared to Africans. In that, an examination of their profile based on chapter 4, reveals that like Africans, they had children, lived in a couple, and did not use contraceptives, but unlike Africans, they were employed. Moreover, the decrease in abortions among these women is consistent with a general sharp decreasing trend in their country of origin due to improvements in contraceptives (Singh et al., 2018). While majority of those from Eastern Europe who obtained an abortion did not use contraceptives, it is likely that there is an overall improvement in the general Eastern European female population which helps to explain the lower abortion rates. Still, the fact that a higher proportion of these women are non-users of contraceptives, suggest the need for further improvements in family planning among these women.

Among women from the EU-West and the Global North, it is observed from Chapter 4 that they are single, employed, have no children and users of contraceptives. Despite their better socio-economic and demographic status however, they had stronger increases in abortion rates over the period examined, compared with more disadvantaged migrant groups. One international study has noted high unintended pregnancy among women from Northern America but indicated that far smaller proportions of unintended pregnancies among these women are resolved through abortions (Singh et al., 2018). This suggests that their socio-economic advantage serves a dual role: it helps to keep abortion rates lower among these women, while simultaneously allowing for easier access to abortions in Spain, with position helping to explain the stronger increases in abortions among these women, relative to other migrants. Further studies are required to disentangle the abortion rates among Northern Americans separate from Northern and Western Europeans.

Organic Law 2/2010 coincided with some changes in abortion rates and trends, such as a global increase in rates among all groups in 2011, one year after the law change, and an increase in the mean rates in the post-intervention period in the overall population, and among women from Spain, EU-West and Global North and Asia. Moreover, although among women from Latin America and the Caribbean, Asia/Oceania and Africa, pre-post comparisons revealed a decrease in mean rates over the two periods, and despite clear downward trends in abortions (except among women from

the EU-West and Global North), our models estimated an increase in abortion rates, albeit only statistically significant among women from Asia/Oceania. These observations suggest that there was some impact of the law on abortion outcomes, but they were only statistically significant among women from Asia/Oceania. Our findings therefore contradict sweeping generalizations that the law change would lead to significant increases in abortion rates as suggested by those who object to the law on the basis that it would lead to substantial increases in abortion rates. Moreover, even among Asian/Oceanic women for whom the effect of the law was found to lead to a significant increase in abortion rates, as the trends of abortion rates are downwards, it remains to be seen if over time the law will continue to have an effect of rates of abortions among these women.

In chapter four we assessed some factors which impact the likelihood of an elective abortion. Our results indicate that, irrespective of nationality, there are certain socio-demographic factors which are common among women, which predisposes them to a higher risk of abortion. While the factors were similar across different nationalities, the magnitude, and in a few cases the direction of the effect, were different. Our study also shows that the profile of women obtaining an elective abortion, while not substantially dissimilar, are more similar for some groups than others. Women from the EU-West and Global North and Spain are the most similar, with women from Latin America also similar to Spanish women, except that a greater proportion of Latin American women have children. Women from Eastern Europe and Asia/Oceania and Africa tend to be more similar, except with respect to unemployment. It is suggested that the differences in these profile help to explain some of the variations found in chapter 3 and the slight variations in chapter 4.

In support of previous literature on general abortions, we found that being younger than 35 years (Zurriaga et al. 2009; Ruiz-Ramos et al., 2012), less educated (Perez et. Al, 2014; Font-Ribera et al. 2008), single (Ruiz-Ramos et al., 2012), having children (Senso, Rodríguez and Arenas, 2022; Ruiz-Ramos et al., 2012; Zurriaga et al. 2009), having had previous abortions, being a migrant (Ruiz-Ramos et al., 2012; Zurriaga et al. 2009) and contraceptive use, are all factors associated with a greater likelihood of an elective abortion. With a few exceptions, the associations observed did not vary with time. We also found that the factors affecting the likelihood of an elective abortion are similar to the factors affecting the likelihood of general abortions, explicated in

previous studies. It appears that prior to the introduction of the law, mental health reasons provided a loophole to obtain what would otherwise have been an elective abortion, explaining the lack of differences observed.

Regarding younger persons being more likely to have an elective abortion, one explanation provided in the literature is that young people postpone motherhood to complete studies or at the commencement of work (Zurriaga et al., 2009; Senso, Rodríguez and Arenas, 2022). Resource constraints and having achieved desired family size has been put forward to help explain why those with children are more likely to have abortions (Ruiz-Ramos et al., 2012; Henshaw and O'Reilly, 1983), while a greater level of unintended pregnancy among those unpartnered, and unstable partnerships have been put forward as likely explanations for higher abortion rates among those not living in a couple (Zurriaga et al., 2009; Sihvo et al., 2003; Ferrer, 2012). What has been deemed as an exposure to abortion effect in one US study, may help to explain the reasons for a greater likelihood of abortion among those with previous abortions (Jones et al., 2018). This implicates the need for improved family planning interventions aimed at deterring recourse to abortions as a method of contraceptive, through knowledge promotion.

While we found the impact of employment to be significant in three cases, among women from the EU-West and Global North, Asia/Oceania and Latin America, we found that the unemployed and students were more likely to have an elective abortion. It is suggested in the literature that this latter finding could be attributable to employed and young women resorting to abortions to maintain job opportunities, and to avoid disrupting their careers. (Senso, Rodríguez and Arenas, 2022; Sihvo et al., 2003). Finally, in respect of contraceptive use, it is suggested that the results are attributed to failed family planning methods and likely due to incorrect use or ineffective means of contraceptives (Purcell et al., 2017).

Throughout the entire study, one common theme is very evident. Women from Africa appear to be the most vulnerable. In chapters 2 and 3, they were found to have the worst social outcomes. In chapter 2, they were found to have been most negatively impacted by RDL 16/2012. We see in chapter 3 that they had decreasing rates of abortions, which, while on the face of it could be a positive outcome, is believed to be likely linked, in part, to greater barriers to access to abortions

based in part on their lower social status. Further research is therefore required to determine with more certainty the actual cause of the decline in the abortion rates among these women. It is notable that Latin American women overall seem to have better health outcomes of cervical, mental health and mammogram screening (chapter 2), but not necessarily with respect to abortions (chapter 3), as they recorded the highest abortion rates. It must be kept in mind however that while they maintained high rates of abortions, their trends of abortion rates remained similar to that of Spanish women, suggesting an advantage that other groups of migrants, particularly those from Africa and Eastern Europe do not share. Moreover, as has been suggested earlier, other factors such as cultural characteristics as well having more children, thus experiencing more unwanted pregnancies could help explain the higher rates among them. Additionally, we attribute the seeming disparities and better outcomes seen in chapter 2 among Latin American women, in part, to sampling biases in the Spanish National Healthy Survey, for which it has been suggested in the literature that migrants of lower socio-economic status are usually unrepresented (Speciale and Regidor, 2010)

Finally, in chapter 4, we found that since the introduction of Organic Law in 2010, among all groups of women, the likelihood of elective abortions decreased over the period examined, compared with our baseline year of 2011. The decreases were stronger among migrants as compared with natives. The strongest decreases were observed among women from Africa and from Eastern Europe. These findings are consistent with the findings in Chapter 3, which shows stronger decreases in general abortions among these group of women. As well, previous studies have found a continuous decrease in rates of abortion, mostly attributed to foreigners (Ruiz-Ramos et al., 2018), but nationality breakdown was not contemplated. It is likely that the decreases are because of barriers to access for migrants, and more specifically, the most vulnerable migrants, as our findings show increases in abortion rates among migrants from the EU-West and Global North.

5.2 Conclusion

The results of the study of the impact of laws on mainly reproductive health outcomes, show important differences between different groups of migrant women and Spanish women. The study highlights a complex interplay between the factors affecting health outcomes. It is a judicious and complex mix of laws, socio-demographic and economic factors which collectively impact health outcomes, and which must be factored into the analysis when policy decisions are being made.

Ultimately the gold standard as it relates to abortion outcomes as suggested by the EU Parliament, is that reduced abortions is best achieved where States combine liberal legislation on abortions with effective family planning, to include without limitation, sex education and access to contraceptives. As it relates to overall improvement in health outcomes and disparities in health, our study reinforces that the implications of law reforms on health outcomes is best studied at disaggregated nationality levels and must address legal, socio-economic, political, cultural and other like factors.

Most significant from the findings is the importance of socio-demographic characteristics in impacting health outcomes. In that, the differences in the socio-demographic characteristics among the different nationalities can partly explain the different health outcomes found. Be it restrictive or permissive laws, it is evident from our findings that the ability to access health care is determined by one's social status. Accordingly, we found that Africans were the most disadvantaged group. They were the only group to have poorer health outcomes in the post RDL 16/2012 period, with respect to three of the four outcome variables of self-rated health, mental health and mammogram and cervical screening. Moreover, even though they had better mental health outcomes, it is suggested that it is due to their lack of participation in the labour force, which has implications for other health outcomes. They also had high abortion rates (albeit not the highest), and though these rates decreased over the period examined from 2008-2017, it appears that the decrease is attributable to, among other factors, a lack of access to abortions, notwithstanding a permissive regulatory framework in the form of Law Organic Law 2/2010.

5.3 Implications

There is a need therefore to continue to monitor the impact of health policies on health outcomes and disparities. Migrants are far from being a homogenous group and while it appears that some groups are making strides in closing the health inequality gaps, other groups appear to be experiencing worse disparities, facilitated by their lower socio-economic status. Targeted policies aimed at the improvement of health outcomes and addressing health inequalities, must, to be effective, account for the different needs of different migrant groups. These findings implicate the improvement of socio-economic conditions for those most vulnerable populations, particularly women from Africa.

Further studies are also implicated. There is not enough evidence in the literature to help explain the strong decreasing trends in abortions observed among Africans and women from Eastern Europe. Other factors not contemplated in this study, such as the lack of information, access to contraceptives and family planning, cultural norms and beliefs are critical but there is not enough information about how these factors affect the sexual and reproductive health outcomes. Moreover, further disentanglement of nationalities is also required to unmask other potential important variations in outcomes.

The overall findings suggest inequalities between nationalities in their ability to access health services and that laws alone cannot fully explain abortion outcomes - the context within which these laws operate are a key component to shaping the laws' impact. Socio-economic, political, cultural and other like factors are therefore implicated. Our study reinforces that policy interventions must account for nationality differentials and that the implications of law reforms on outcomes is best studied at disaggregated nationality levels.

5.4 Recommendations

- It is recommended that policy interventions aimed at social cohesion and integration, include ways of improving the social and economic status of those most disadvantaged, particularly migrant women from Africa.

- It is recommended that efforts aimed improving social cohesion and integration include as part of the discourse, input from those most vulnerable to understand what their needs and challenges are, and how best to meet these needs. A bottom-up approach is required, that includes multi-level stakeholders.

- It is recommended that the efforts geared towards family planning and contraceptives be reviewed and revised to ensure that there is not just access to contraceptives, but that there is also information and guidance regarding correct use and effective means, based on individual's needs.

- It is recommended that policy interventions, whether to prevent unwanted pregnancies or to better serve women who require abortions, include a culturally sensitive and diverse component.

- Continuous monitoring of the number and characteristics of women who obtain elective abortions in Spain should continue so that trends can be assessed, and efforts to prevent unwanted pregnancy can be evaluated.

References

Bruquetas-Callejo, M. and Perna, R. (2020). Migration and Healthcare Reforms in Spain: Symbolic Politics, Converging Outputs, Oppositions from the Field. *South European Society and Politics*, 25(1), pp.75–98. doi:10.1080/13608746.2020.1769342.

Cimas, M., Gullon, P., Aguilera, E., Meyer, S., Freire, J.M. and Perez-Gomez, B. (2016). Healthcare coverage for undocumented migrants in Spain: Regional differences after Royal Decree Law 16/2012. *Health Policy*, [online] 120(4), pp.384–395. doi:10.1016/j.healthpol.2016.02.005. Center for Economic and Social Rights (CESCR) (2012), *UN Committee calls on Spain to revise austerity measures*, 24 May 2012, "[Press Release]" available at: https://www.cesr.org/un-committee-calls-spain-revise-austerity-measures [accessed 11 April 2021]

Center for Economic and Social Rights (CESCR) (2017), Spanish Court Spanish Court restricts autonomous communities' power to expand universal healthcare, 15 December 2017, "[Press Release]" available at: https://www.cesr.org/spanish-constitutional-court-restricts-autonomous-communities-regulatory-power-expand-universal [accessed 11 April 2021].

Committee on Economic, Social and Cultural Rights. *General Comment No. 14: The Right to the Highest Attainable Standard of Health (Art. 12)*. Geneva, Switzerland: United Nations; 2000. UN document E/C.12/2000/4.

Ferrer, L (2012). Lògiques socials i decisions individuals de la interrupció voluntària del l'embaràs: espanya a través d'una perspectiva comparada. Centre d'Estudis Demogràfics, Universitat Autònoma de Barcelona

Font-Ribera, L., Pérez, G., Salvador, J. and Borrell, C. (2007). Socioeconomic Inequalities in Unintended Pregnancy and Abortion Decision. *Journal of Urban Health*, [online] 85(1), pp.125–135. doi:10.1007/s11524-007-9233-z.

Gispert Magarolas, R., Clot-Razquin, G., Torné, M. del M., Bosser-Giralt, R. and Freitas-Ramírez, A. (2008). Diferencias en el perfil reproductivo de mujeres autóctonas e inmigrantes residentes en Cataluña. *Gaceta Sanitaria*, [online] 22(6), pp.574–577. Available at: https://scielo.isciii.es/scielo.php?script=sci_arttext&pid=S0213-91112008000600011 [Accessed 17 Dec. 2022].

Juárez, S.P., Honkaniemi, H., Dunlavy, A.C., Aldridge, R.W., Barreto, M.L., Katikireddi, S.V. and Rostila, M. (2019). Effects of non-health-targeted policies on migrant health: a systematic review and meta-analysis. *The Lancet Global Health*, 7(4), pp.e420–e435. doi:10.1016/s2214-109x(18)30560-6.

Knudsen, L.B., Rasch, V. and Gammeltoft, T. (2006). Recourse to induced abortion among native and foreign women in Denmark: A Study of Social Vulnerability and the choice of Induced Abortion. *vbn.aau.dk*. [online] Available at: https://vbn.aau.dk/en/publications/recourse-to-induced-abortion-among-native-and-foreign-women-in-de [Accessed 8 Dec. 2022].

Lobera, J. (2021). Postcolonial Bonds? Latin American Origins, Discrimination, and Sense of Belonging to Spain. *American Behavioral Scientist*, 65(9), p.000276422199675. doi:10.1177/0002764221996757.

Malmusi, D. and Pérez, G. (2009). [Induced abortion in immigrant women in a urban setting]. *Gaceta Sanitaria*, [online] 23 Suppl 1, pp.64–66. doi:10.1016/j.gaceta.2009.05.006.

UN Office of the High Commissioner for Human Rights (OHCHR) (2008), *Fact Sheet No. 31, The Right to Health*, June 2008, No. 31, available at: https://www.refworld.org/docid/48625a742.html [accessed 11 April 2021]

Ostrach, B. (2012). 'Yo No Sabía...'—Immigrant Women's Use of National Health Systems for Reproductive and Abortion Care. *Journal of Immigrant and Minority Health*, 15(2), pp.262–272. doi:10.1007/s10903-012-9680-9.

Ostrach, B. (2020). Publicly Funded Abortion and Marginalised People's Experiences in Catalunya. *Anthropology in Action*, 27(1), pp.24–34. doi:10.3167/aia.2020.270103.

Pellico-López, A., Paz-Zulueta, M., Manjón-Rodríguez, J.B., Sánchez Movellán, M., Ajo Bolado, P., García-Vázquez, J., Cayón-De Las Cuevas, J. and Ruiz-Azcona, L. (2022). Evolution of Legislation and the Incidence of Elective Abortion in Spain: A Retrospective Observational Study (2011-2020). *International Journal of Environmental Research and Public Health*, [online] 19(15), p.9674. doi:10.3390/ijerph19159674.

Pérez, G., Rodríguez-Sanz, M., Domínguez-Berjón, F., Cabeza, E. and Borrell, C. (2014). Indicadores para monitorizar la evolución de la crisis económica y sus efectos en la salud y en las desigualdades en salud. Informe SESPAS 2014. *Gaceta Sanitaria*, 28(Suppl 1), pp.124–131. doi:10.1016/j.gaceta.2014.03.009.

Purcell, C., Riddell, J., Brown, A., Cameron, S., Melville, C., Flett, G., Bhushan, Y. and McDaid, L. (2017). Women's experiences of more than one termination of pregnancy within two years: a mixed-methods study. *BJOG: An International Journal of Obstetrics & Gynaecology*, 124(13), pp.1983–1992. doi:10.1111/1471-0528.14940.

Speciale, A.M. and Regidor, E. (2010). Understanding the Universality of the Immigrant Health Paradox: The Spanish Perspective. *Journal of Immigrant and Minority Health*, 13(3), pp.518–525. doi:10.1007/s10903-010-9365-1.

Rodriguez-Alvarez, E., Borrell, L.N., González-Rábago, Y., Martín, U. and Lanborena, N. (2016). Induced abortion in a Southern European region: examining inequalities between native and immigrant women. *International Journal of Public Health*, 61(7), pp.829–836. doi:10.1007/s00038-016-0799-7.

Ruiz-Ramos, M., Ivañez-Gimeno, L. and García León, F.J. (2012). Características sociodemográficas de la interrupción voluntaria del embarazo en Andalucía: diferencias entre población autóctona y extranjera. *Gaceta Sanitaria*, 26(6), pp.504–511. doi:10.1016/j.gaceta.2011.11.017.

Senso, S.G., Rodríguez, M.C. and Arenas, M.Á.R. (2022). Factors related to the voluntary interruption of pregnancy in Spain. *Journal of Preventive Medicine and Hygiene*, [online] 63(1), pp.E69–E69. doi:10.15167/2421-4248/jpmh2022.63.1.2299.

Sihvo, S. (2003). Women's life cycle and abortion decision in unintended pregnancies. *Journal of Epidemiology & Community Health*, 57(8), pp.601–605. doi:10.1136/jech.57.8.601.

Singh, S., Remez, L., Sedgh, G., Kwok, L. and Onda, T. (2018). *Abortion Worldwide 2017: Uneven Progress and Unequal Access*. [online] Guttmacher Institute. Available at: https://www.guttmacher.org/report/abortion-worldwide-2017.

UN Office of the High Commissioner for Human Rights (OHCHR), *Fact Sheet No. 31, The Right to Health*, June 2008, No. 31, available at: https://www.refworld.org/docid/48625a742.html [accessed 11 April 2021] pp. 18-20

United Nations Entity for Gender Equality and the Empowerment of Women (UN Women) (2019). *Beijing Declaration and Platform for Action, Beijing +5 Political Declaration and Outcome*. [online] UN Women. Available at: https://www.unwomen.org/en/digital-library/publications/2015/01/beijing-declaration [Accessed 20 Dec. 2022].

WHO (2018). *Promoting Health in All Policies and intersectoral action capacities*. [online] Who.int. Available at: https://www.who.int/activities/promoting-health-in-all-policies-and-intersectoral-action-capacities.

Zurriaga, O., Martínez-Beneito, M.A., Galmés Truyols, A., Torne, M.M., Bosch, S., Bosser, R. and Portell Arbona, M. (2009). Recourse to induced abortion in Spain: profiling of users and the influence of migrant populations. *Gaceta Sanitaria*, [online] 23 Suppl 1, pp.57–63. doi:10.1016/j.gaceta.2009.09.012.

APPENDIX

Table A2.1: Mean ages of the study population by year and nationality

	Nationality									
	Spain		EU-West/Global North		EU East and rest Eastern Europe		Northern Africa and rest Global South		Latin America	
	2011/12	2017	2011/12	2017	2011/12	2017	2011/12	2017	2011/12	2017
Mean Ages	44.22	45.46	49.1	46.82	39.05	40.92	34.29	39.85	39.14	41.51

Table A2.2: Logistic regression predicting the likelihood of perceived good health. Good mental health, mammography and cervical test among Spanish nationals

Characteristics	Self-perceived Health				Mental Health				Mammogram				Cervical Smear			
	OR	p-value	CI 95%		OR	p-value	CI 95%		OR	p-value	CI 95%		OR	p-value	CI 95%	
Region of residence/Year																
Applied Law - year 2017	0.902	0.028*	0.822	0.989	1.109	0.033*	1.009	1.220	0.963	0.444	0.875	1.061	1.034	0.467	0.945	1.131
Applied Law - year 2011/12 (Ref)	……..	……..	……..	……..	……..	……..	……..	……..	……..	……..	……..	……..	……..	……..	……..	……..
Age																
25-34	3.285	0.000*	2.812	3.837	1.381	0.000*	1.183	1.612	0.016	0.000*	0.014	0.020	1.369	0.000*	1.191	1.574
35-44	2.126	0.000*	1.867	2.421	1.100	0.173	0.959	1.263	0.062	0.000*	0.054	0.072	1.542	0.000*	1.356	1.755
45-54	1.401	0.000*	1.244	1.578	0.961	0.552	0.844	1.095	0.386	0.000*	0.336	0.443	1.513	0.000*	1.338	1.712
55-64 (Ref)	……..	……..	……..	……..	……..	……..	……..	……..	……..	……..	……..	……..	……..	……..	……..	……..
Education																
Up to end compulsory education	0.472	0.000*	0.419	0.531	0.699	0.000*	0.620	0.788	0.596	0.000*	0.528	0.673	0.443	0.000*	0.396	0.497
Second phase and medium vocational	0.718	0.000*	0.626	0.823	0.828	0.007*	0.722	0.950	0.925	0.250	0.809	1.057	0.780	0.000*	0.683	0.891
High vocational and university (Ref)	……..	……..	……..	……..	……..	……..	……..	……..	……..	……..	……..	……..	……..	……..	……..	……..
Employment Status																
Not Working/ Not in Labour Force	0.606	0.000*	0.543	0.676	0.561	0.000*	0.499	0.630	0.935	0.284	0.828	1.057	0.707	0.000*	0.634	0.788
Unemployed	0.667	0.000*	0.586	0.759	0.478	0.000*	0.420	0.544	0.891	0.106	0.775	1.025				
Employed (Ref)	……..	……..	……..	……..	……..	……..	……..	……..	……..	……..	……..	……..	……..	……..	……..	……..
Civil Status																
Not in a couple	0.791	0.000*	0.713	0.877	0.740	0.000*	0.666	0.821	0.768	0.000*	0.689	0.856	0.568	0.000*	0.515	0.626
In a couple (Ref)	……..	……..	……..	……..	……..	……..	……..	……..	……..	……..	……..	……..	……..	……..	……..	……..
Constant	3.701				5.620				8.235				4.118			
N	10225				10225				10242				10255			
-2LL	11128				10675				10424				11643			
R2	0.084				0.033				0.319				0.057			
Adjusted R2	0.123				0.051				0.425				0.083			

Note: *p<0.05

Table A2.3: Logistic regression predicting the likelihood of perceived good health. Good mental health, mammography and cervical test among migrants from EU West and Global North

Characteristics	Self-perceived Health				Mental Health				Mammogram				Cervical Smear			
	OR	p-value	CI 95%		OR	p-value	CI 95%		OR	p-value	CI 95%		OR	p-value	CI 95%	
Region of residence/Year																
Applied Law - year 2017	0.327	0.010*	0.140	0.765	0.358	0.048*	0.130	0.989	1.323	0.359	0.728	2.406	1.010	0.978	0.515	1.979
Applied Law - year 2011/12 (Ref)	……..	……..	…….	…….	……..	……..	…….	……..	……..	……..	…….	…….	……..	……..	……..	……..
Age																
25-34	0.984	0.980	0.278	3.483	0.288	0.093	0.067	1.232	0.039	0.000*	0.011	0.145	5.381	0.002	1.810	15.997
35-44	1.076	0.900	0.343	3.371	0.551	0.397	0.139	2.187	0.302	0.004*	0.132	0.689	12.371	0.000*	3.771	40.591
45-54	0.957	0.929	0.361	2.533	0.621	0.482	0.165	2.341	0.869	0.705	0.421	1.794	2.715	0.009*	1.279	5.761
55-64 (Ref)	……..	……..	…….	…….	……..	……..	…….	……..	……..	……..	…….	…….	……..	……..	……..	……..
Education																
Up to end compulsory education	0.144	0.000*	0.053	0.392	0.227	0.022*	0.064	0.812	0.319	0.002*	0.156	0.653	0.333	0.003*	0.162	0.688
Second phase and medium vocational	0.349	0.060	0.117	1.044	0.194	0.014*	0.053	0.713	0.759	0.466	0.362	1.593	1.329	0.505	0.576	3.066
High vocational and university (Ref)	……..	……..	…….	…….	……..	……..	…….	……..	……..	……..	…….	…….	……..	……..	……..	……..
Employment Status																
Not Working/ Not in Labour Force	0.274	0.008*	0.105	0.718	0.325	0.101	0.085	1.247	0.940	0.862	0.468	1.890	0.555	0.111	0.269	1.144
Unemployed	0.184	0.001*	0.069	0.489	0.125	0.000*	0.041	0.382	1.664	0.232	0.721	3.840	0.639	0.313	0.268	1.525
Employed (Ref)	……..	……..	…….	…….	……..	……..	…….	……..	……..	……..	…….	…….	……..	……..	……..	……..
Civil Status																
Not in a couple	0.565	0.178	0.246	1.298	0.165	0.000*	0.060	0.450	0.636	0.174	0.331	1.222	1.316	0.460	0.635	2.730
In a couple (Ref)	……..	……..	…….	…….	……..	……..	…….	……..	……..	……..	…….	…….	……..	……..	……..	……..
Years in Spain																
Short-term (0-9 years)	0.895	0.811	0.362	2.213	0.785	0.696	0.233	2.643	0.291	0.000*	0.150	0.568	1.080	0.834	0.528	2.206
Long-term (10+ years) (Ref)	……..	……..	…….	…….	……..	……..	…….	……..	……..	……..	…….	…….	……..	……..	……..	……..
Constant	72.635				37.177				3.824				1.518			
N	195				198				198				195			
-2LL	197.92				135.46				296.05				260.24			
R	0.138				0.144				0.232				0.226			
R2	0.234				0.297				0.331				0.319			

Note: *p<0.05

Table A2.4: Logistic regression predicting the likelihood of perceived good health. Good mental health, mammography and cervical test among migrants from EU East and rest Eastern Europe

Characteristics	Self-perceived Health				Mental Health				Mammogram				Cervical Smear			
	OR	p-value	CI 95%		OR	p-value	CI 95%		OR	p-value	CI 95%		OR	p-value	CI 95%	
Region of residence/Year																
Applied Law - year 2017	2.039	0.001	1.318	3.153	1.307	0.290	0.796	2.145	1.142	0.609	0.686	1.903	1.011	0.957	0.687	1.488
Applied Law - year 2011/12 (Ref)	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Age																
25-34	4.541	0.000	2.152	9.586	1.584	0.300	0.664	3.778	0.042	0.000	0.016	0.106	1.636	0.168	0.813	3.294
35-44	2.623	0.010	1.257	5.473	1.403	0.445	0.588	3.349	0.124	0.000	0.057	0.271	2.014	0.051	0.996	4.073
45-54	1.682	0.179	0.788	3.593	0.543	0.162	0.231	1.279	0.753	0.460	0.355	1.598	1.510	0.277	0.718	3.175
55-64 (Ref)	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Education																
Up to end compulsory education	0.382	0.002	0.205	0.711	0.603	0.114	0.321	1.130	0.422	0.013	0.213	0.836	0.300	0.000	0.177	0.510
Second phase and medium vocational	0.397	0.002	0.220	0.714	1.454	0.243	0.775	2.727	1.118	0.713	0.618	2.020	0.719	0.196	0.437	1.186
High vocational and university (Ref)	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Employment Status																
Not Working/ Not in Labour Force	2.417	0.004	1.315	4.443	1.592	0.174	0.814	3.115	0.653	0.208	0.337	1.267	0.671	0.112	0.410	1.097
Unemployed	1.088	0.731	0.672	1.761	1.204	0.521	0.683	2.124	0.546	0.054	0.295	1.010	0.776	0.268	0.495	1.215
Employed (Ref)	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Civil Status																
Not in a couple	0.833	0.428	0.530	1.309	0.715	0.198	0.430	1.191	0.456	0.008	0.255	0.814	0.706	0.107	0.463	1.078
In a couple (Ref)	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Years in Spain																
Short-term (0-9 years)	1.680	0.023	1.073	2.632	2.121	0.005	1.254	3.589	0.854	0.561	0.502	1.454	0.882	0.539	0.592	1.315
Long-term (10+ years) (Ref)	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Constant	0.975				2.382				2.576				1.660			
N	304				303				303				304			
-2LL	573.81				461.56				426.36				665.83			
R	0.099				0.081				0.196				0.082			
R2	0.14				0.129				0.301				0.109			

Note: $*p<0.05$

Table A2.5: Logistic regression predicting the likelihood of perceived good health. Good mental health, mammography and cervical test among migrants from Northern Africa and rest Global South

Characteristics	Self-perceived Health				Mental Health				Mammogram				Cervical Smear			
	OR	p-value	CI 95%		OR	p-value	CI 95%		OR	p-value	CI 95%		OR	p-value	CI 95%	
Region of residence/Year																
Applied Law - year 2017	0.573	0.058	0.323	1.018	1.945	0.040	1.032	3.665	0.342	0.003	0.169	0.693	0.955	0.870	0.553	1.650
Applied Law - year 2011/12(Ref)	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Age																
25-34	4.941	0.002	1.805	13.524	4.745	0.014	1.367	16.469	0.061	0.000	0.017	0.226	1.032	0.949	0.395	2.695
35-44	5.272	0.000	2.074	13.404	2.580	0.093	0.852	7.807	0.335	0.035	0.121	0.928	1.874	0.168	0.767	4.580
45-54	2.409	0.085	0.886	6.550	3.874	0.040	1.062	14.137	0.852	0.762	0.303	2.394	0.757	0.589	0.276	2.076
55-64 (Ref)	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Education																
Up to end compulsory education	0.345	0.060	0.114	1.045	4.219	0.001	1.758	10.123	0.482	0.147	0.180	1.292	0.484	0.041	0.241	0.972
Second phase and medium vocational	0.105	0.000	0.033	0.338	1.177	0.721	0.482	2.874	0.432	0.151	0.137	1.358	0.778	0.527	0.357	1.694
High vocational and university (Ref)	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Employment Status																
Not Working/ Not in Labour Force	1.187	0.568	0.659	2.138	1.764	0.102	0.894	3.478	0.818	0.590	0.394	1.699	0.788	0.363	0.471	1.317
Unemployed	2.023	0.083	0.911	4.493	0.622	0.251	0.276	1.399	1.046	0.923	0.421	2.594	1.053	0.883	0.531	2.085
Employed (Ref)	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Civil Status																
Not in a couple	1.259	0.452	0.691	2.295	1.584	0.230	0.747	3.356	1.716	0.144	0.831	3.543	0.754	0.314	0.436	1.306
In a couple (Ref)	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Years in Spain																
Short-term (0-9 years)	2.738	0.002	1.430	5.240	0.889	0.753	0.426	1.855	1.265	0.580	0.550	2.911	0.955	0.870	0.553	1.650
Long-term (10+ years) (Ref)	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Constant	1.591				0.993				2.440				1.799			
N	248				243				247				248			
-2LL	364.07				292.47				261.43				457.27			
R	0.183				0.089				0.135				0.058			
R2	0.257				0.145				0.228				0.077			

Note: *$p<0.05$

Table A2.6: Logistic regression predicting the likelihood of perceived good health. Good mental health, mammography and cervical test among migrants from Latin American

Characteristics	Self-perceived Health				Mental Health				Mammogram				Cervical Smear			
	OR	p-value	CI 95%		OR	p-value	CI 95%		OR	p-value	CI 95%		OR	p-value	CI 95%	
Region of residence/Year																
Applied Law - year 2017	1.516	0.008	1.114	2.061	2.324	0.000	1.704	3.169	1.408	0.048	1.003	1.978	2.525	0.000	1.818	3.508
Applied Law - year 2011/12	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Age																
25-34	3.856	0.000	2.199	6.761	1.210	0.513	.684	2.142	0.017	0.000	0.009	0.036	1.254	0.443	0.703	2.235
35-44	1.463	0.139	.884	2.420	.834	0.510	.486	1.431	0.037	0.000	0.019	0.071	0.715	0.231	0.413	1.238
45-54	1.279	0.354	.760	2.153	.658	0.139	.378	1.145	0.177	0.000	0.094	0.333	1.365	0.300	0.758	2.455
55-64	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Education																
Up to end compulsory education	.502	0.000	.341	.739	.720	0.083	.497	1.044	0.507	0.002	0.333	0.774	0.474	0.000	0.318	0.707
Second phase and medium vocational	.560	0.003	.382	.822	.887	0.524	.613	1.283	0.716	0.099	0.482	1.065	0.721	0.112	0.481	1.079
High vocational and university	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Employment Status																
Not Working/ Not in Labour Force	0.581	0.007	.392	.862	.564	0.004	.382	0.833	1.087	0.711	0.698	1.694	0.622	0.025	0.411	0.943
Unemployed	0.642	0.015	.450	.917	.594	0.004	.417	0.845	0.950	0.807	0.629	1.435	0.950	0.796	0.645	1.399
Employed	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Civil Status																
Not in a couple	1.602	0.002	1.181	2.173	1.171	0.302	.868	1.579	0.547	0.001	0.385	0.778	0.504	0.000	0.370	0.687
In a couple	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Years in Spain																
Short-term (0-9 years)	1.780	0.000	1.289	2.457	1.944	0.000	1.404	2.692	1.102	0.592	0.771	1.575	1.212	0.265	0.865	1.698
Long-term (10+ years)	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Constant	1.289				1.822				8.978				3.893			
N	634				634				633				634			
-2LL	1148.7				1155.1				958.65				1067.3			
R	0.105				0.070				0.235				0.08			
R2	0.147				0.100				0.334				0.118			

Note: *p<0.05

Figure A3.1: Abortion rates of women 15-49 years resident in Spain by year and nationality
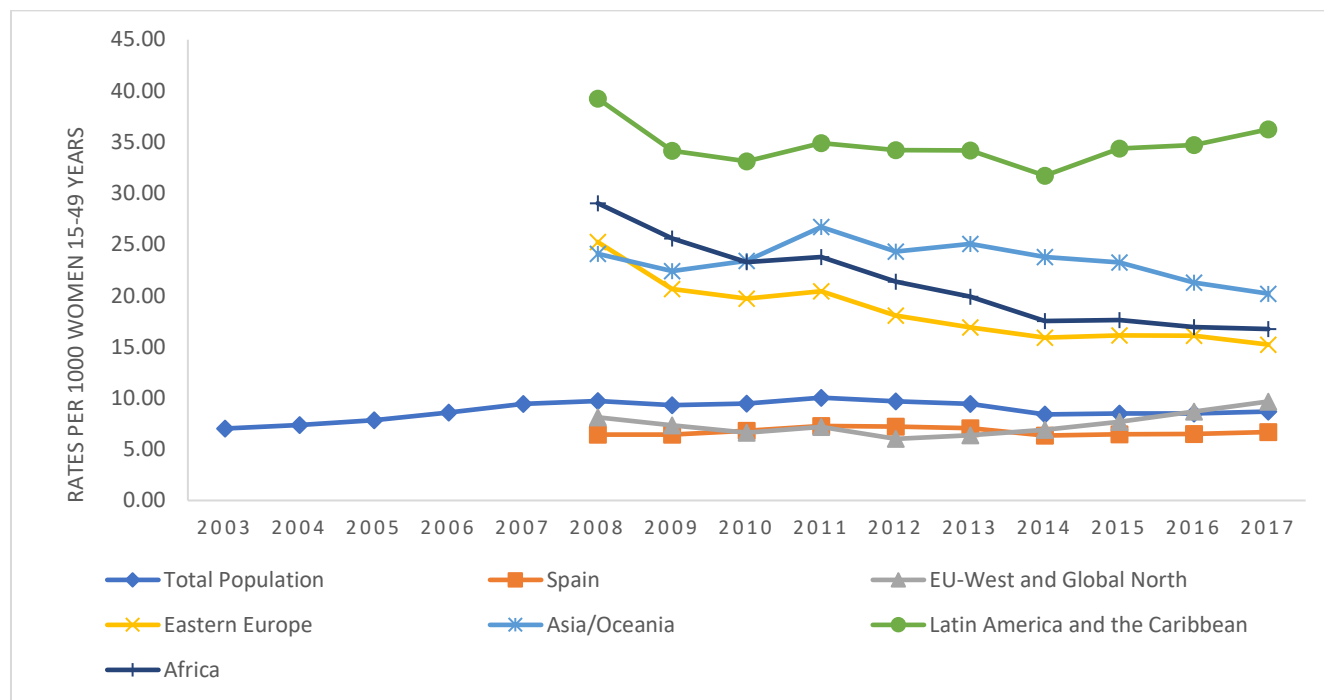

Figure A3.2: Age-specific abortion rates of women 15-49 years resident in Spain by year
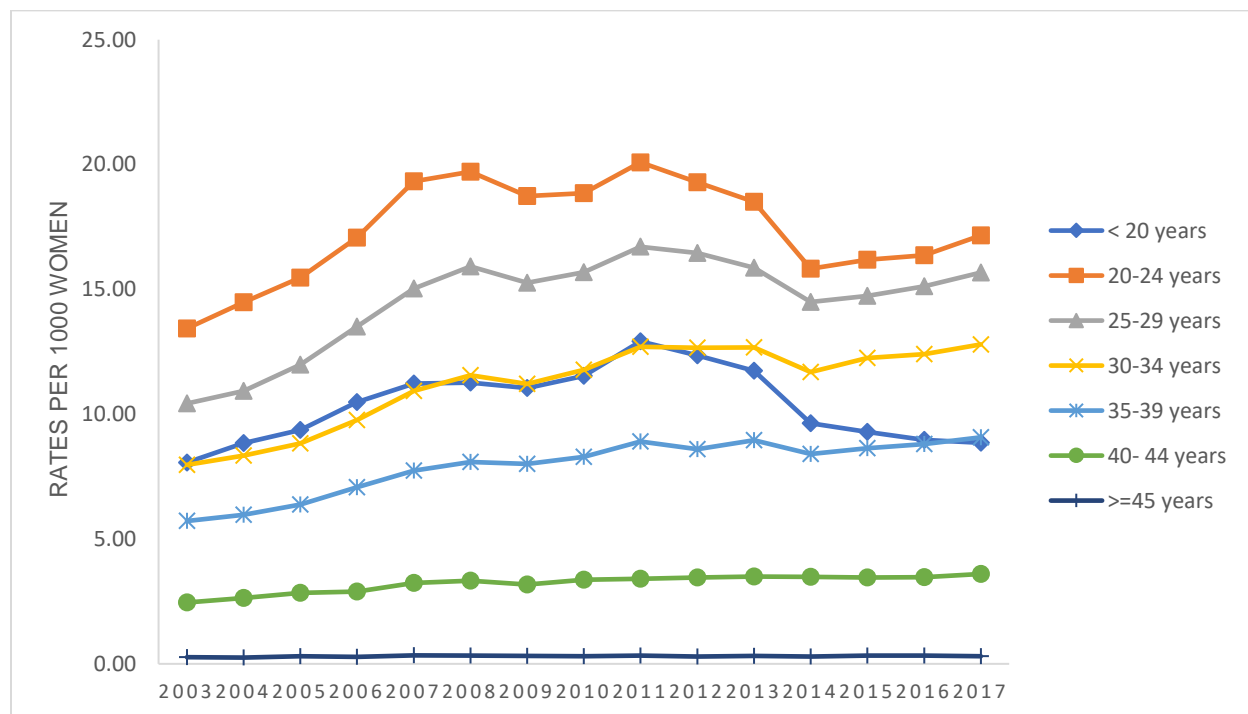
Figure A3.3: Age-specific abortion rates per 1000 women of Spanish women 15-49 years resident in Spain by year
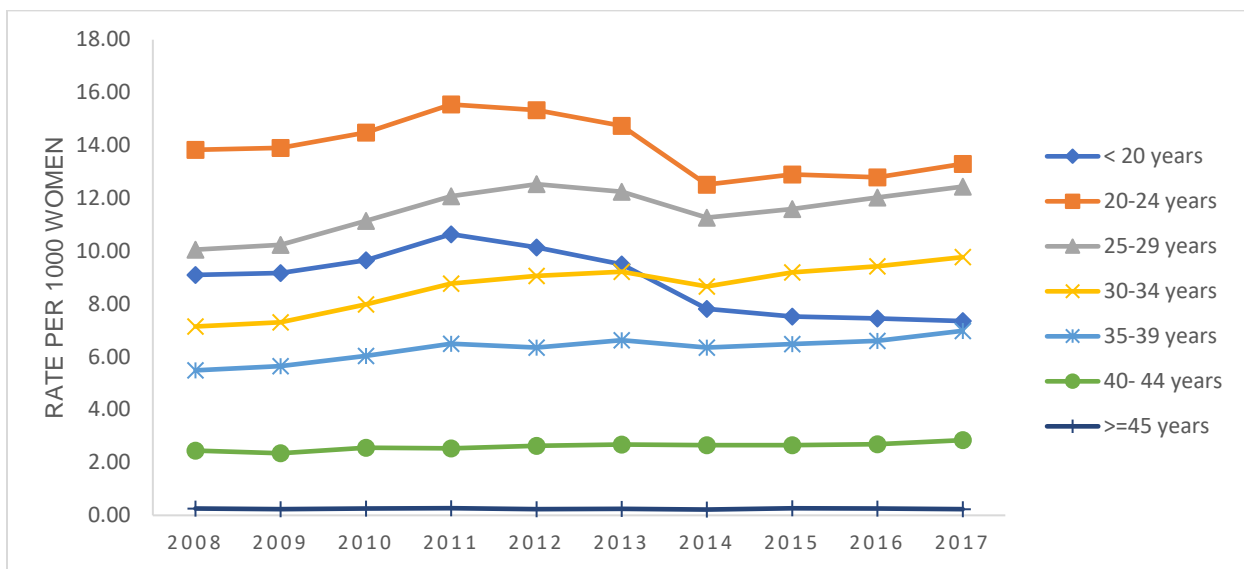

Figure A3.4: Age-specific abortion rates per 1000 women of women 15-49 years from the EU-West and Global North resident in Spain by year
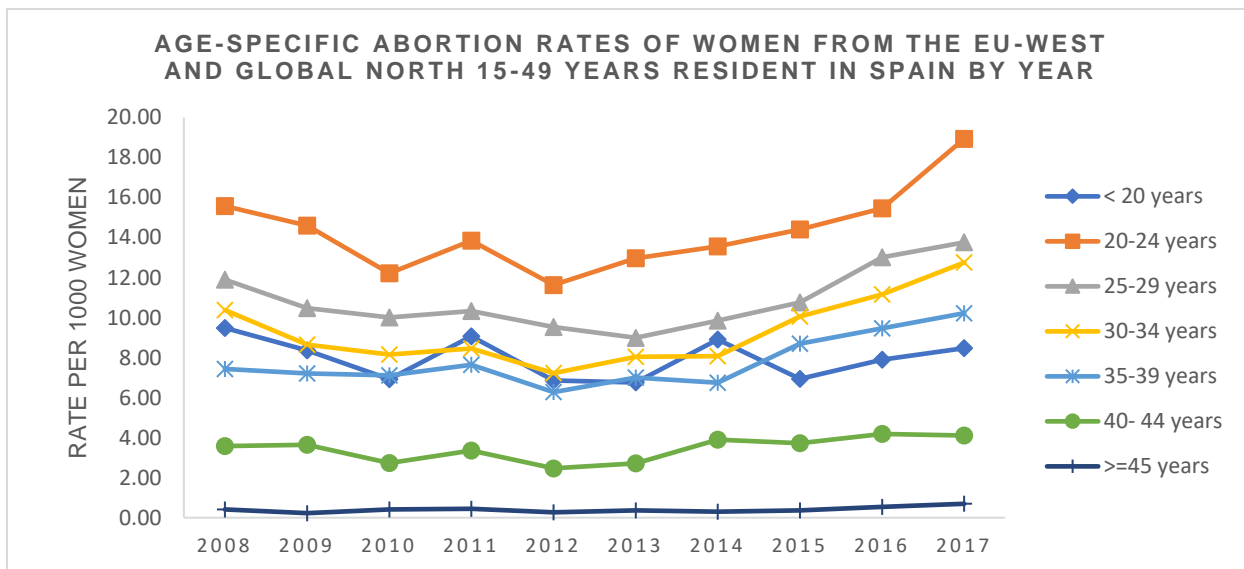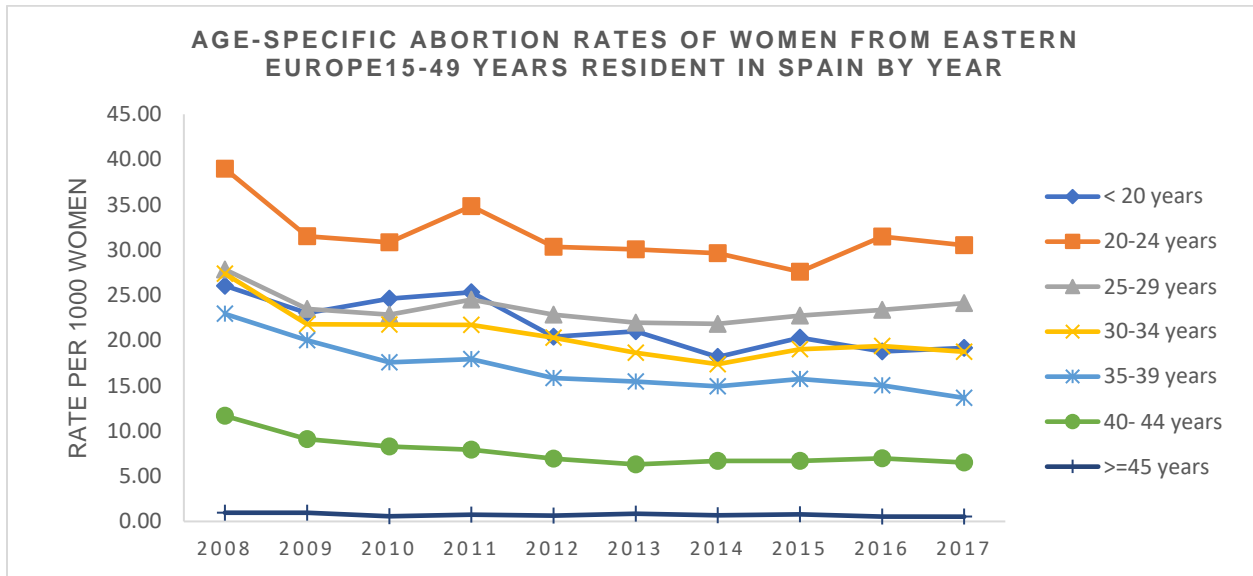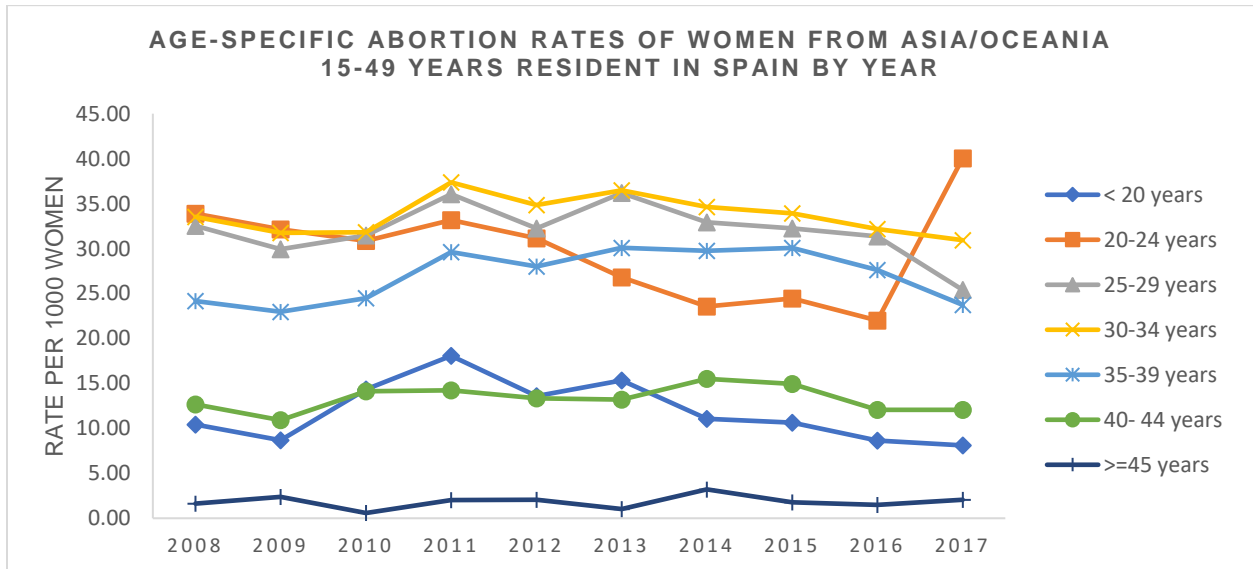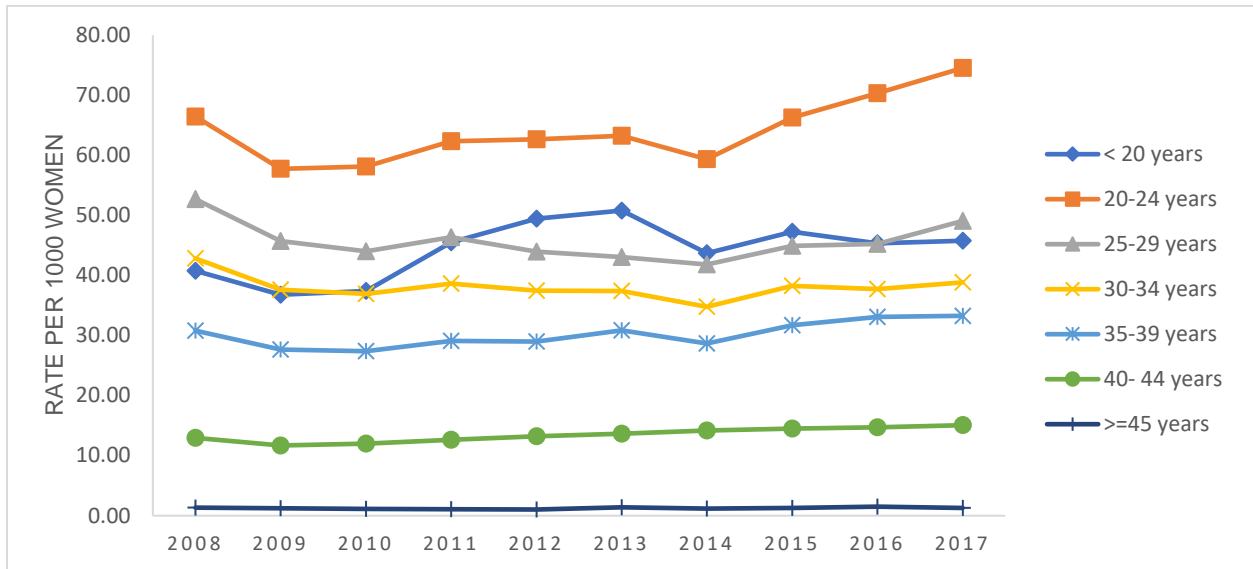
Figure A3.5: Age-specific abortion rates per 1000 women of Eastern European women 15-49 years resident in Spain by year

Figure A3.6: Age-specific abortion rates per 1000 women of Asian/Oceanic women 15-49 years resident in Spain by year

Figure A3.7: Age-specific abortion rates per 1000 women of Latin America and Caribbean women 15-49 years resident in Spain by year

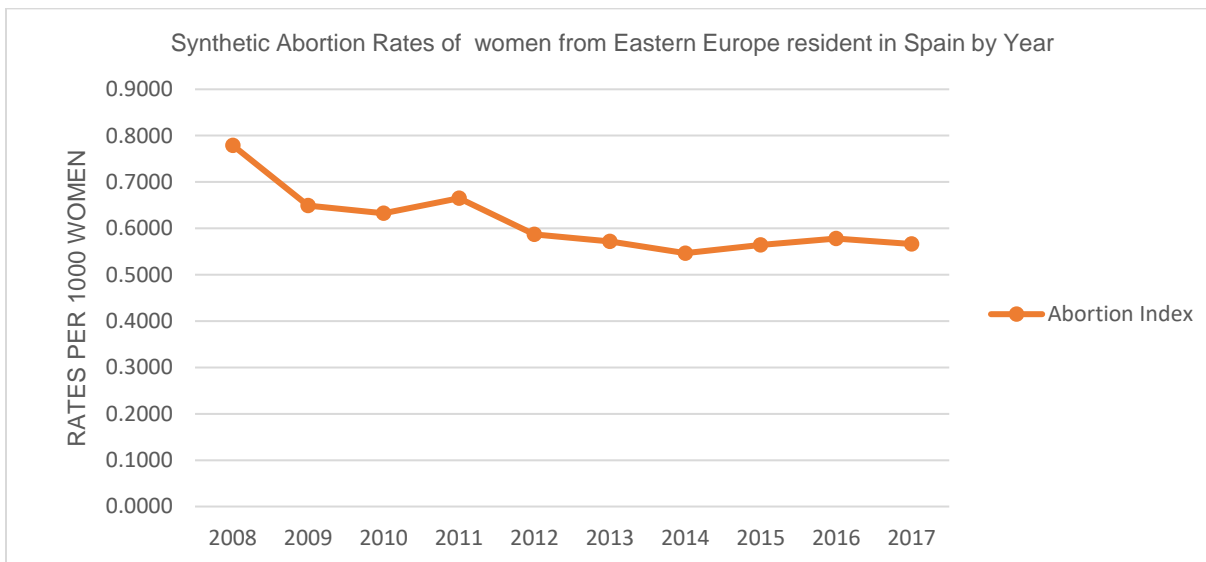Figure A3.8: Age-specific abortion rates per 1000 women of African women 15-49 years resident in Spain by year
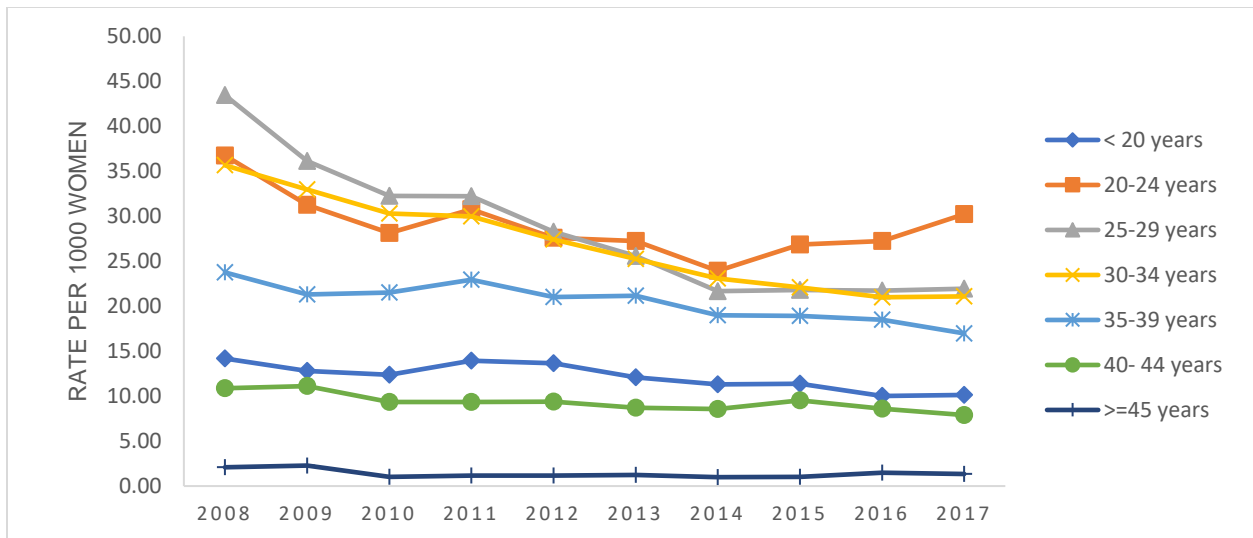
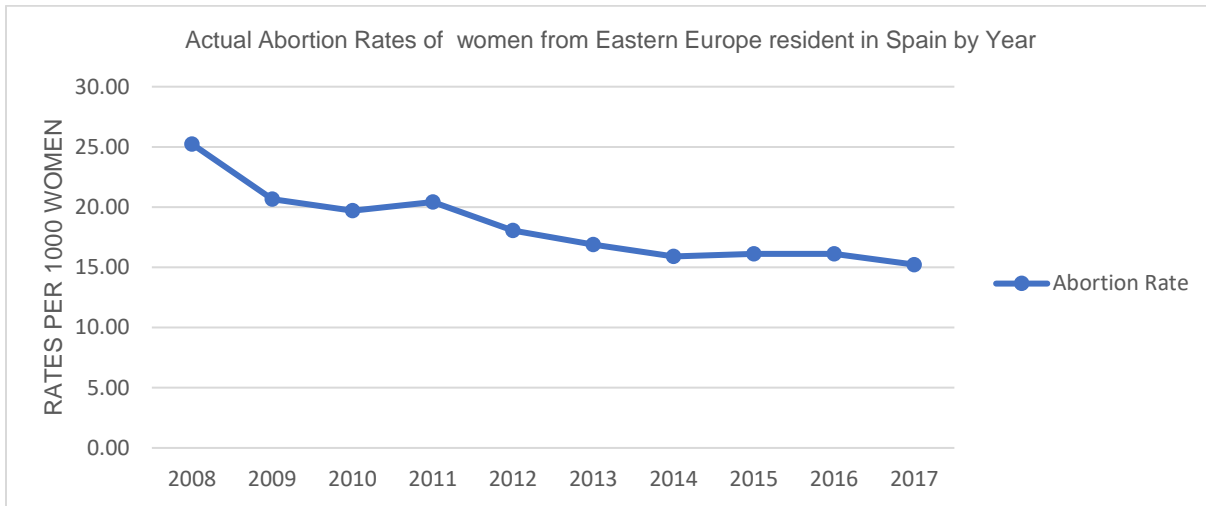Figure A3.9: Comparison of annual and synthetic (index) abortion rates of women 15-49 years resident in Spain
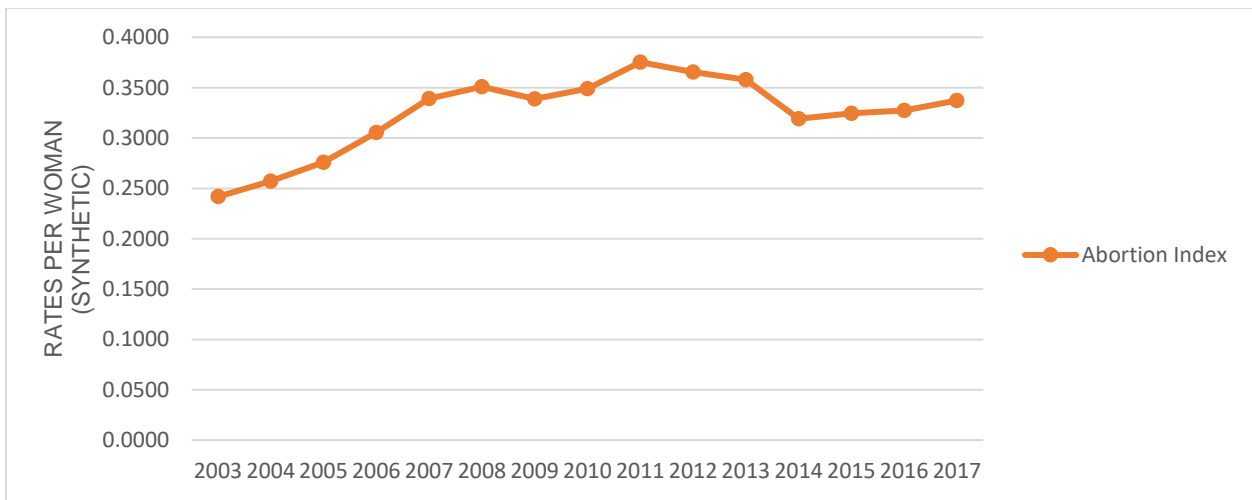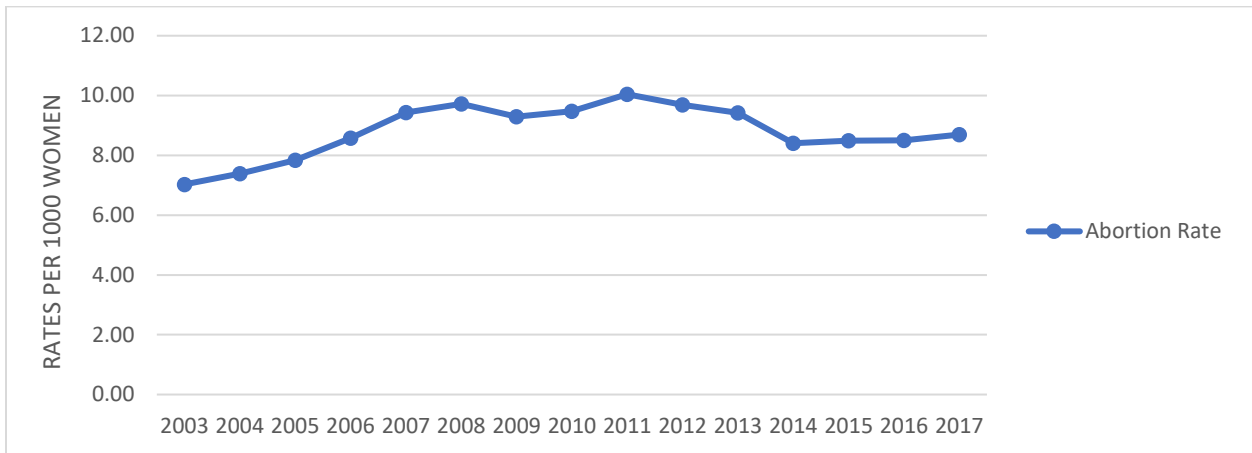
Figure A3.10: Comparison of annual and synthetic (index) abortion rates of Spanish women 15-49 years resident in Spain
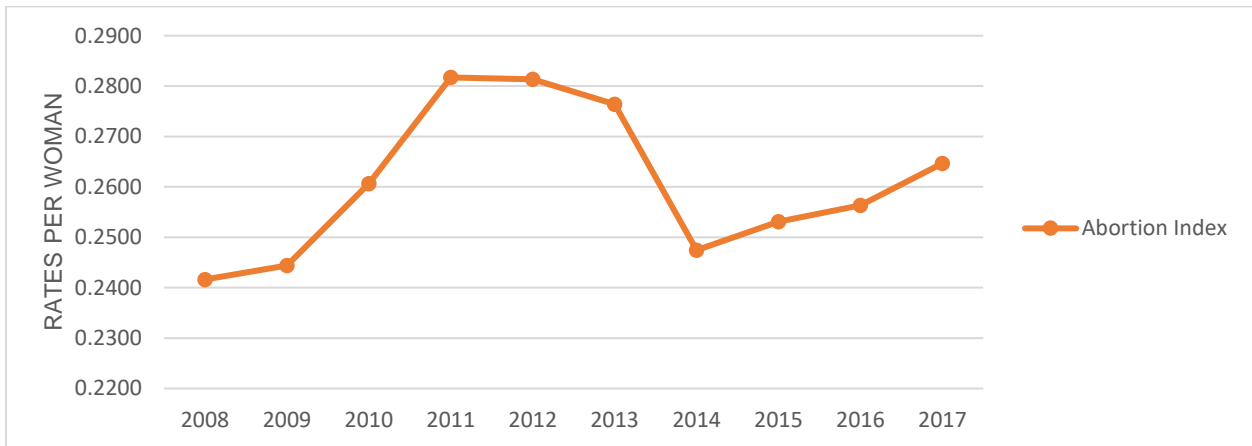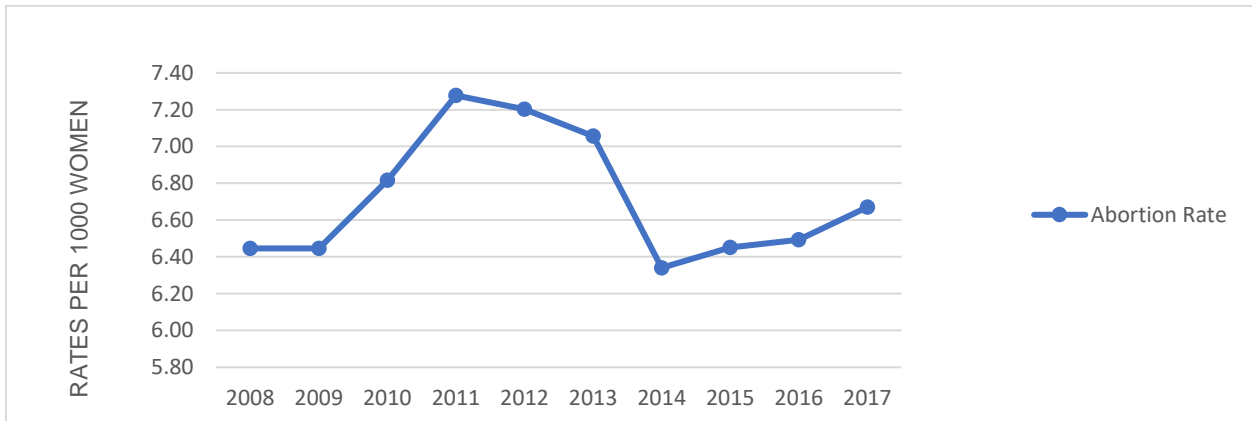
Figure A3.11: Comparison of annual and synthetic (index) abortion rates of EU-West and Global North women 15-49 years resident in Spain
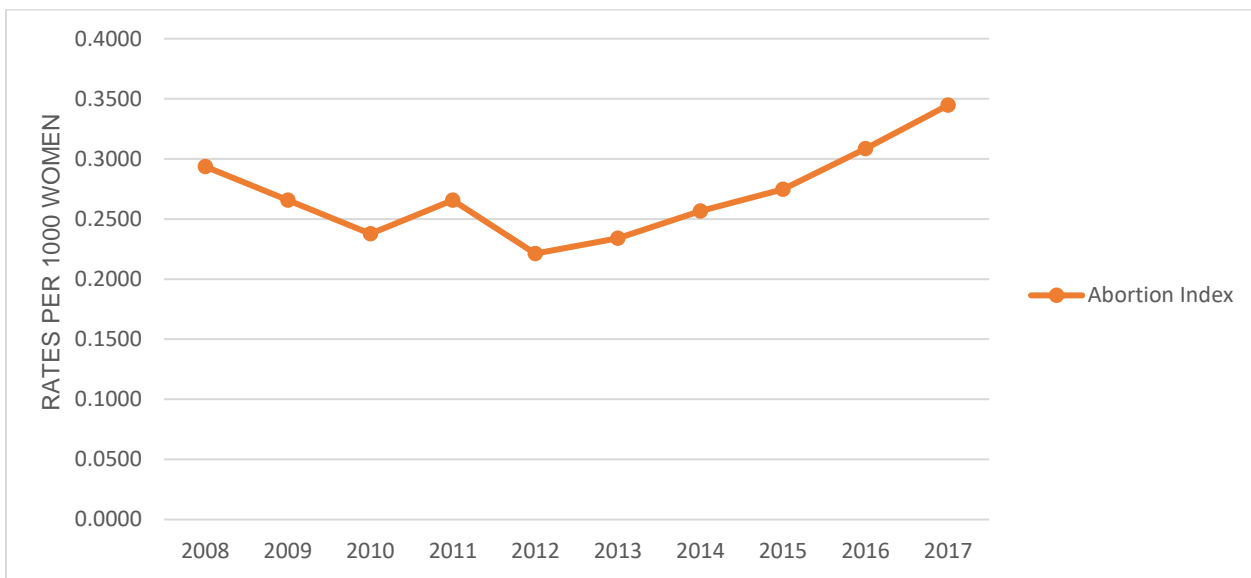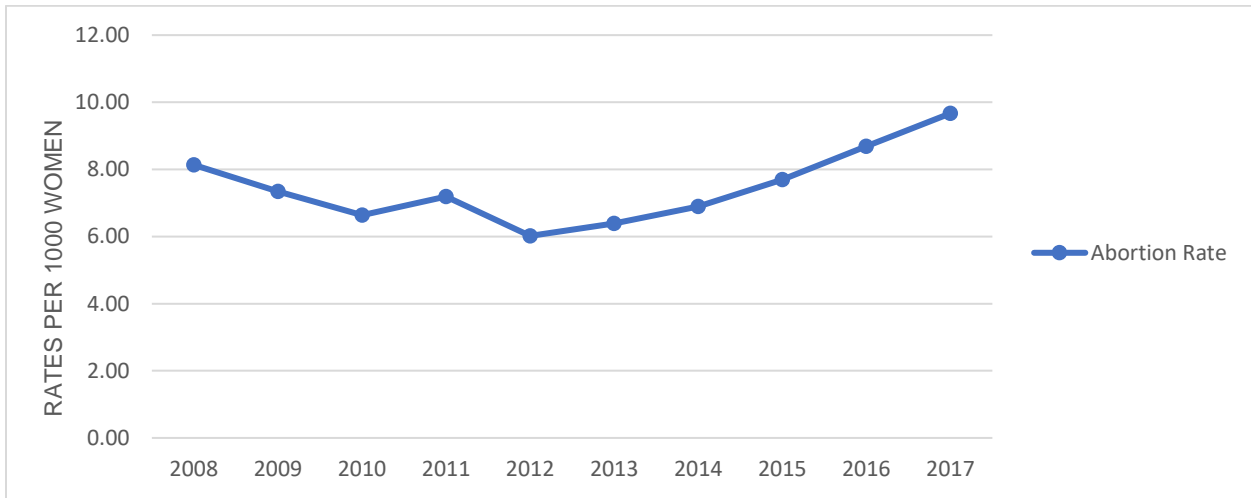
Figure A3.12: Comparison of annual and synthetic (index) abortion rates of Eastern European women 15-49 years resident in Spain


Actual Abortion Rates of women from Eastern Europe resident in Spain by Year

Synthetic Abortion Rates of women from Eastern Europe resident in Spain by Year

Figure A3.13 Comparison of annual and synthetic (index) abortion rates of Asian/Oceanic women 15-49 years resident in Spain

Actual Abortion Rates of women from Asia/Oceania resident in Spain by Year

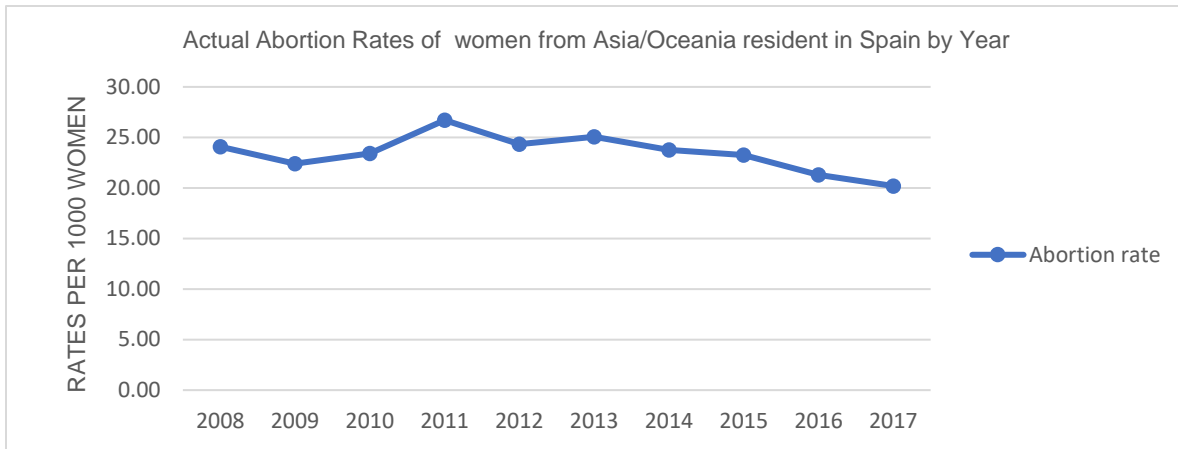Actual Abortion Rates of women from Asia/Oceania resident in Spain by Year
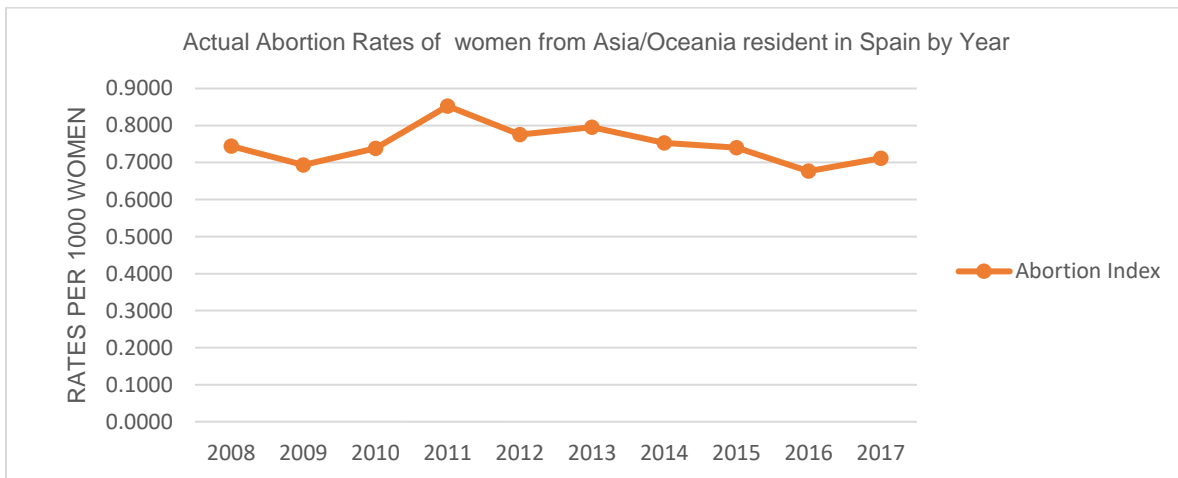
Figure A3.14: Comparison of annual and synthetic (index) abortion rates of Latin America and the Caribbean women 15-49 years resident in Spain
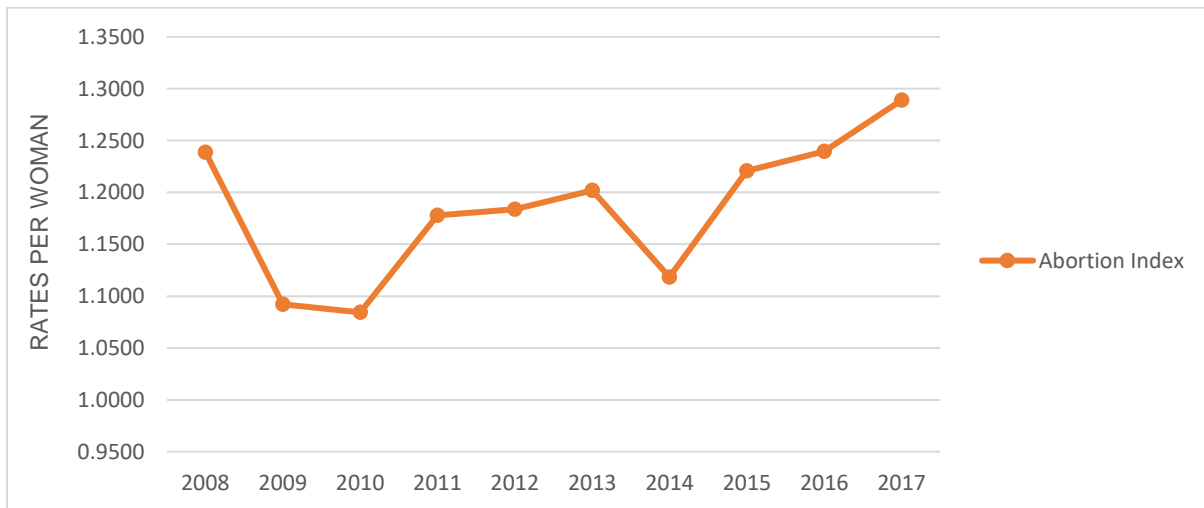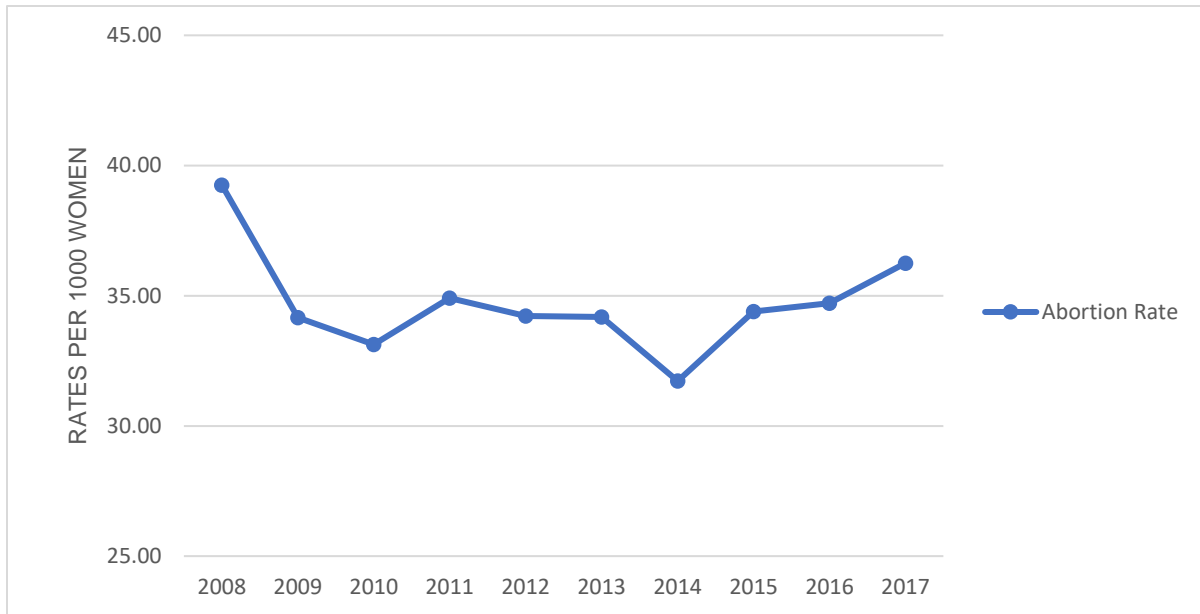
Figure A3.15: Comparison of annual and synthetic (index) abortion rates of Africa women 15-49 years resident in Spain