

Immigration and Environmental Justice:  
A Look at the Disproportionate Effects of Air Pollution on Immigrant Communities in Spain

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## Personal Background Information

As a student double majoring in Environmental Studies and Global Studies, I wanted to pursue a research topic that combined my concern for environmental issues with my interests in social and political matters outside of the United States. Having studied abroad in Spain during the summer of 2019, I decided that I would focus my research on Spain to learn more about its people and how they interact with perceived ‘outsiders’. This desire to focus on those deemed as outsiders stems from what I learned in a history course I took while in the country. Many times throughout Spanish history, groups of people (namely Jews and Muslims) have been expelled from the country or discriminated against because they were marked as ‘different’ from other people that lived in the region. Today, as the country experiences a surge in immigration from places such as North Africa, Latin America, and Eastern Europe, I wanted to see what living conditions for immigrants are like. Though much of the literature analyzing the living conditions of immigrants does so through an economic or social perspective, I wanted to do the same from an environmental lens. In other European countries, immigrants are often adversely impacted by environmental hazards and have a difficult time obtaining environmental justice. Knowing that air pollution levels in Spain often exceed the acceptable limits established by the European Union and that immigrants in the country are disproportionately impacted by pollution, I decided to explore environmental justice issues in the Spanish context.

# Chapter One

## Introduction

### Introductory Remarks

For decades, scholars of environmental justice in the United States have studied why some communities are more heavily impacted by environmental hazards than others. Among the groups that are often cited as being disproportionately affected include racial/ethnic minorities and low-income individuals. The popularity of the environmental justice movement in the United States has allowed it to spread across the world to places like Latin America, Africa, and Europe. In response to this, European scholars of environmental justice have begun to examine the prevalence of environmental hazards in poor and immigrant communities in several countries. Through this research, these scholars have identified various instances in which these communities suffer from higher rates of exposure to environmental harms when compared to the general population. In the United Kingdom, for example, ethnic groups that are not classified as White-British are exposed to 17.5 percent higher concentrations of PM10, a major air pollutant (UK Notification to the European Commission 2009). In France, spatial analyses have shown that “towns with high proportions of immigrants hosted more hazardous sites, even controlling for population size, income, [and] degree of industrialization of the town and region” (Laurian 2008). Additionally, studies on Central and Eastern European countries have concluded that environmentally hazardous sites and activities seem to be disproportionately located in areas

with a high percentage of ethnic minorities (Ember et al. 2002). These studies add to the growing list of analyses in this field that show that studying environmental issues from an environmental justice lens can uncover important patterns, particularly when it comes to the role of race in Europe.

One place where scholars have just begun to look at environmental issues from an environmental justice lens is Spain. In the past decade, Spain has seen a large increase in the number of immigrants (most of which are racial and ethnic minorities) entering the country for work and educational opportunities. Moreover, the country has high levels of air pollution which some environmental justice scholars claim are concentrated in areas with large immigrant populations as in other European countries. The surge in immigration to Spain and the high level of air pollution present there begs the question of whether immigrants in the country are disproportionately impacted by air pollution and, if so, why? More specifically, are these unequal outcomes the result of systemic discrimination or something else? Throughout this chapter, I will lay the groundwork for this thesis by providing background information on relevant topics including environmental justice, air pollution, and immigration in the Spanish context.

## Background

### Environmental Justice, Air Pollution, and Immigration

At first glance, the issues of environmental justice, air pollution, and immigration may not seem like they are related. However, upon closer inspection, the connections that exist between the three fields become much clearer in the Spanish context. Air pollution has been a significant issue in Spain for many years and has been associated with higher rates of cardiovascular and respiratory diseases as well as some direct deaths (Ballester et al. 2002).

Though air pollution impacts all Spaniards, immigrant communities seem to be amongst the groups that have been the hardest hit given their proximity to major transportation routes and polluting industries. This disproportionate burden of air pollution coupled with a lack of action on the part of Spanish government officials to resolve the problem constitutes an environmental injustice. Given the wide variety of other issues that immigrants face, the burden of air pollution can be seen as yet another barrier for immigrants to overcome. This makes it harder for them to achieve a higher standard of living and leads to disparities between immigrants and native-born Spaniards. In the next few sections, this thesis will explore each of these three fields to deepen an understanding of the current situation in Spain.

### Environmental Justice in the Spanish Context

As mentioned before, the widespread popularity of the environmental justice movement in the United States during the 1980s caused it to spread to different parts of the globe including Spain. As a member of the European Union, some of the country's first commitments to ensuring environmental justice came as a result of the Aarhus Convention of 1998 which sought to establish continent-wide goals to combat environmental issues. Under this agreement, Spain and other European countries affirmed the right of everyone to receive access to information on the environment, participate in environmental decision-making, and obtain environmental justice through the political system (Aarhus Convention 1998). To deliver on these promises, the Spanish government ordered the recently established Environmental Advisory Board (CAMA in Spanish) to act as a forum in which local organizations, citizens, and other groups could provide input on environmental policies promoted by the government (Ministerio para la Transición Ecológica y el Reto Demográfico 2021). Though this board has improved transparency within



the decision-making process, many critics argue that it is not sufficient by itself. They claim that immigrants in Spain still lack the ability to obtain environmental justice because they face higher rates of poverty than the general population. These disproportionate rates of poverty come as a result of marginalization in the labor market which has forced many immigrants from the Global South to work in low-paying jobs with high turnover rates (Calavita 1998). To have a greater chance of obtaining environmental justice, however, immigrants need to overcome these financial burdens, especially in the legal system where the cost of litigating environmental issues is high (Ruiz 2018). One environmental justice issue that has drawn more attention in recent years is that of air pollution across Spain.

### The Adverse Impacts of Air Pollution on Immigrants

Despite attempts by the government to reduce pollution, air pollution still presents a significant challenge for many parts of Spain. Currently, 15 million people in the country are adversely affected by air pollution with Madrid and Barcelona being the areas that are most heavily impacted (Sánchez & Sevillano 2018). Additionally, some environmental activists are concerned that due to the ongoing economic recovery, the country may see an increase in fossil fuel consumption and eventually a rise in emissions (Sánchez & Sevillano 2018). While air pollution impacts everyone, though, not all populations face the same level of risk. Immigrants in Spain are more likely to live in geographic areas with higher concentrations of air pollution than non-immigrants (Moreno-Jiménez et al. 2016). This increased level of exposure to pollutants has contributed to worse health outcomes for immigrants thereby broadening existing socio-economic inequalities. However, these inequalities do not exist as a result of air pollution but may rather come as a consequence of discrimination by native-born Spaniards.

## Attitudes Towards Immigration

During the Great Recession, hundreds of thousands of people were forced to flee Spain in search of better economic opportunities elsewhere. As the country's economy has recovered, however, it has begun to see a surge in immigration from places such as Morocco, Latin America, and other European countries (Mount & Romei 2019). According to a recent analysis conducted by the United Nations, there are over 6 million immigrants in Spain which represent roughly 13% of the country's total population (United Nations Statistics Division 2019). This change is also occurring at a fast rate. In 2018 alone, for instance, the population grew by roughly 276,000 people largely as a result of immigration (Mount & Romei 2019). For Spain, which has a long history of emigration, this increase has caused many native-born Spaniards to grow resentful of immigrants whom they perceive as a threat to their economic and cultural wellbeing (Moldes-Anaya et al. 2018). This perceived economic threat is based on the assumption that immigrants do not contribute to the funding of social services and are therefore an economic burden. On the cultural side, many native-born Spaniards worry that the rapid growth of immigrant populations will cause the country to adopt cultural practices that do not align with traditional Spanish values. These negative attitudes have led many immigrants to face racial and economic discrimination in their everyday lives and may contribute to the environmental issues they are facing.

## Research Question and Why it Matters

This thesis looks to understand how the issues that immigrant populations in Spain face interact with problems associated with air pollution. Studies that have looked at both income and

education levels have revealed that immigrants in the country have worse economic outcomes than non-immigrants do (Bradatan and Sandu 2012). In terms of health, other analyses are beginning to show that some immigrants such as Ecuadorians also have worse health outcomes than native-born Spaniards, especially when it comes to mental health (Llácer et al. 2009). Furthermore, air pollution is recognized as a serious issue in areas with large populations such as Madrid and Barcelona. However, much of the literature that looks at both the issues that immigrants face and air pollution do not discuss the intersection between the two. For instance, one article did an in-depth analysis of the economic outcomes of Romanians and Moroccans in Spain and discussed how they were related to larger political and social trends. On the other hand, a recent study from *El País*, one of the country's most popular newspapers, details the types of pollutants that Spain is impacted by and the health ramifications of long-term exposure. While both analyses are important, they would be stronger if they took a more holistic approach that looked at how immigrants are more heavily affected by air pollution than others and how those issues related to the other struggles they face. In this thesis, the connection between immigrants and air pollution will be examined through an environmental justice lens. This will include looking at procedural barriers (i.e., structural frameworks that limit access to justice) and distribution issues (i.e., whether or not there is equal access to a healthy environment).

This research is important for numerous reasons. First, by understanding the relationship between air pollution and immigration, Spanish policymakers can make more informed decisions about how to reduce emissions and ensure equal access to a healthy environment. Currently, there is not much understanding of immigrant populations with regards to the environmental challenges they face. This research could remedy that and pave the way for future research into this same area. In addition, the lessons that are learned by studying Spain could be applied to

other countries in Europe. As mentioned earlier, studies in both France and the United Kingdom have shown that immigrant/non-white communities are exposed to higher concentrations of air pollution. If the problems faced in these countries are caused by similar factors, then the conclusions that are reached in this thesis about Spain could be applied to them as well.

### Methodologies

This thesis will primarily rely on secondary sources including newspapers, academic articles, public health journals, and government reports. In the analyses of these materials, special attention will be placed on connecting health issues related to air pollution and environmental justice to the daily struggles that immigrants face. Additionally, the barriers (e.g., financial or social) that limit the immigrant population's ability to ameliorate these problems will be looked at. Due to the evolving nature of these problems, most of the research that will be used in this thesis will be from roughly the last twenty years to provide the most accurate analysis possible.

With regards to government analyses, official reports from the Spanish government (both from national and regional entities), the European Union, and the United Nations will be used. These reports are especially useful for contextualizing the topics discussed in this paper into a broader discourse on global environmental justice. Official reports will also be utilized to describe the living conditions of immigrant populations in Spain as well as the degree to which air pollution is a problem.

In terms of analyzing the effects of air pollution on immigrant communities, this paper will focus on health impacts. Health impacts were chosen due to the large amount of literature that currently exists for them and because they have been used in similar analyses. They will be

examined in a wide variety of ways including the number of cases of cardiovascular and respiratory disease as well as mortality rates directly linked to air pollution. When possible, the thesis will look at how exposure to air pollution worsens already existing issues within immigrant communities.

### Road Map

This thesis will utilize the following structure. The second chapter will be a thematic literature review centered around environmental justice, air pollution, and immigration in Spain. Next, the third chapter will focus on analyzing the data and interpreting the results. This chapter will also look at the specific ways in which immigrants are affected by air pollution and how it relates to other issues they face daily. The fourth chapter will analyze the data that was gathered and contextualize it to fit an environmental justice lens with a focus on distributive and procedural justice. The final chapter will serve as a conclusion and suggest future research topics for this field of study.

# Chapter Two

## Literature Review

### Introduction

Throughout this section, I will examine the debates and methods that scholars engage with to study issues related to environmental justice, air pollution, and immigration. I will look at how environmental justice is defined and how it has been studied within the Spanish context. I will also analyze how scholars study air pollution issues and why looking at multiple forms of pollution at once may be the best approach to use in the future. Lastly, I will take a look at how studies on immigration often leave out environmental issues despite immigrant populations facing significant health ramifications from air pollution. By understanding the debates and ways in which scholars conduct research into these fields, we can determine why immigrants suffer disproportionately from air pollution in Spain.

### Debates on Environmental Justice

The meaning of environmental justice varies, however, it is often broadly defined as equal access to a safe, healthy environment regardless of socioeconomic status. Dr. Robert Bullard, widely regarded as the father of environmental justice, defines it as “the principle that all people and communities are entitled to equal protection of environmental and public health laws and regulations” (Bullard 1990). The Environmental Protection Agency (EPA), at the

recommendation of scholars focused on racial and socioeconomic disparities, considers environmental justice to be “the fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income, with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies” (Environmental Protection Agency 2021). Given the focus of this thesis on the environmental issues impacting immigrants in Spain, I will use both of these definitions of environmental justice going forward.

There is disagreement among scholars of environmental justice as to how to both quantify and document environmental injustices in different communities (Mohai et al. 2009). Many in the field believe that studying environmental issues should be done from a racial/ethnic lens with a particular focus on historically marginalized groups. These scholars (whose views represent that of the vast majority of those in the field) believe that environmental inequality is primarily due to ongoing and historical racism. Others, however, argue that while race may be a contributing factor to environmental injustice for some communities, income may ultimately play a larger role (Been 1994). These scholars believe that focusing on the impact of class is more important for analyzing who is at greater risk of living near an environmental nuisance. Over time, this controversy has become known as the “race versus class debate”. Despite this dichotomy, however, it should be noted that many studies in the United States and other countries often find a correlation between race/ethnicity and class. In Spain, for instance, Moroccan and Romanian immigrants are reported to have worse economic outcomes than natives regardless of their level of educational attainment (Bradatan and Sandu 2012). For this reason, virtually all the literature in this field uses both race and class to some degree to conduct their analyses.

Additionally, scholars within the field of environmental justice are also engaging in a dialogue known as the “chicken and egg debate”. This debate revolves around the question of whether poor/minority communities or hazardous facilities come first (Mohai et al. 2009). This question is relevant because it influences how environmental inequality is studied in various contexts. For instance, if the assumption is that minority populations move to areas with more environmental hazards, scholars could study what governmental and social structures push them to those places. On the other hand, if minorities have a pre-existing population within a particular area and then hazardous facilities move in, it may be more relevant to ask what government policies have allowed it to happen. While this debate continues, most environmental justice scholars acknowledge that both situations have equal merit and deserve to be examined seriously.

## Methods of Study

### Environmental Justice in the Spanish Context

Having originated in the United States in 1982, the concept of environmental justice began showing up in Spain near the end of the 1990s. As mentioned in the introduction, the Aarhus Convention of 1998 was an international agreement between European countries to improve access to information on the environment, expand public participation in the decision-making process, and advance environmental justice (Ruiz 2018). Since the Aarhus Convention was one of the earliest attempts in Spain to incorporate environmental justice into public policy, it has influenced some of the literature on this topic. In *Access to Environmental Justice at the Community Level and in Spain Twenty Years after the Aarhus Convention*, Ángel Ruiz highlights the procedural obstacles that exist to ensuring environmental justice for



low-income individuals in the Spanish judicial system. By far, the biggest issue that these individuals face in obtaining environmental justice is the excessive cost of litigation in the courts (Ruiz 2018). Often, individuals and environmental NGOs who take cases to court are responsible for setting money aside to cover the potential costs of delaying infrastructure projects that can act as environmental hazards. Since litigating cases within the judicial system can take many years, low-income individuals and NGOs are forced to set aside huge sums of money to have their cases heard. This has made it more difficult for low-income Spaniards and NGOs to eliminate the environmental hazards that pose a threat to communities.

Other scholars have taken a slightly different approach to study environmental justice in Spain by focusing on specific environmental issues. For example, in their work on waste incineration in cement kilns, Herrero and Vilella discuss how local organizations communicate about pollution in their communities to showcase the growth of the environmental justice movement. They determine that the growing use of expressions like “the right to breathe clean air” and “the right to health” shows that environmental groups in Spain are beginning to engage with ideas articulated by environmental justice movements in the United States and Latin America (Herrero and Vilella 2017). Additionally, they emphasize that many of the people involved in the movement have been socially marginalized in some way (e.g., by geography or class). Laconi et al. also focus on a specific environmental issue to highlight larger trends within environmental justice literature. In *Promoting Environmental Justice through Integrated Mapping Approaches*, Laconi et al. analyze the role of data and citizen science in the research and decision-making process to promote environmental justice in Andalusia (Laconi et al 2020). Specifically, they look at problems associated with access to water as well as ongoing urban water supply and sanitation issues in the region which is known to be drought-prone. They argue

that involving local citizens in the research and data collection processes increases the relevance of research findings for individuals and may improve the effectiveness of solutions if citizens' concerns are taken seriously (Laconi et al 2020).

Studies on environmental justice in Spain usually seek to identify the failures of government institutions and policies to solve environmental issues. They measure differences in economic and judicial outcomes between populations (e.g., low-income vs. middle-class communities) while offering solutions to problems that they find during their research. Frequently, these solutions seek to expand public participation in the democratic process to ensure that the concerns of all communities are addressed when it comes to environmental hazards. Going forward, this thesis will take a similar approach by focusing on how the Spanish government has been unable to deliver environmental justice to immigrant populations and how government policies play a role.

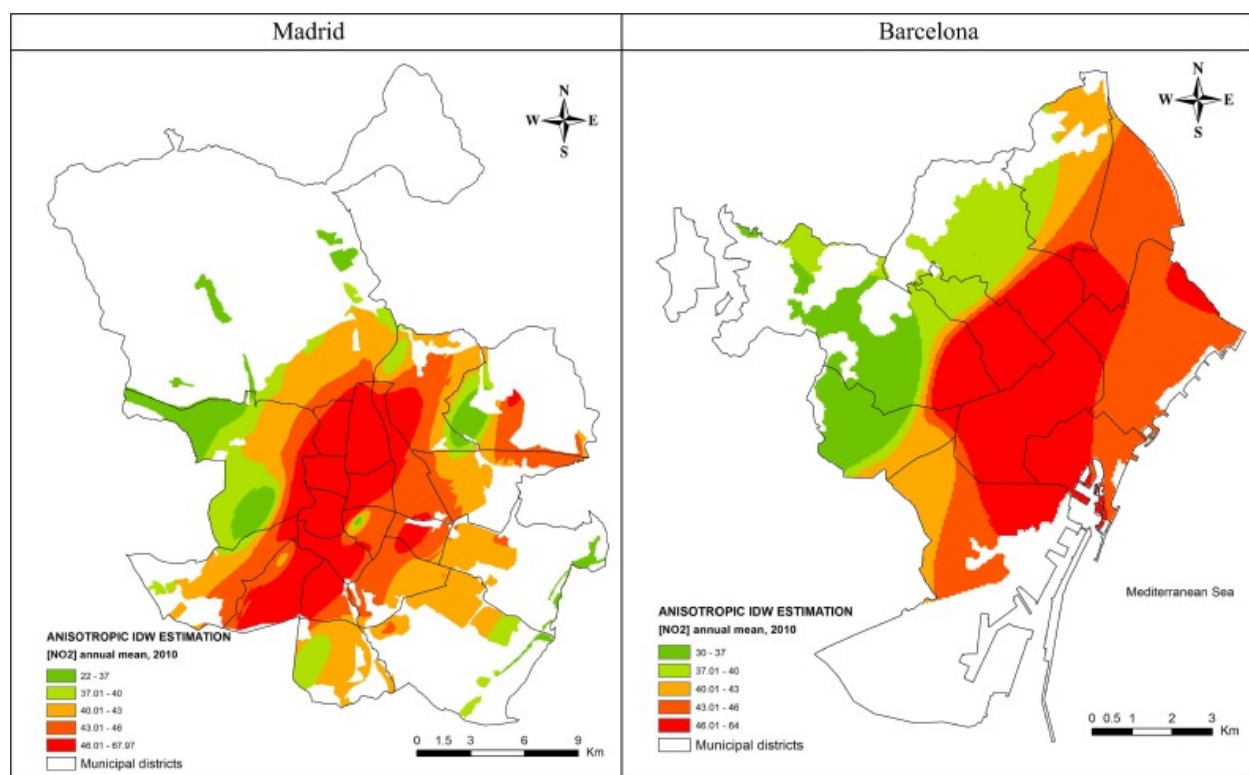
### The Study of Air Pollution

Currently, much of the literature on air pollution focuses on the economic and health ramifications of excess concentrations of pollutants such as sulfur dioxide. Generally, scholars have focused their analyses on one form of air pollution within a defined geographic area to identify the costs of that particular pollutant. However, a significant drawback of this approach is that even if a specific pollutant is chosen, it is difficult to know whether the costs that are represented in the model only show those of one form of pollution. This is mostly because multiple types of air pollution can be emitted from the same source such as a coal power plant which can therefore impact the findings of a study. To address this issue, some scholars have decided to incorporate multiple forms of air pollution into their studies. For example, in their

study on welfare loss in 18 Western European countries as a result of air pollution, Nam et al. 2010 utilize various major air pollutants like sulfur dioxide, nitrogen oxide, and particulate matter. Through this, they were able to find that excess air pollution has resulted in a substantial economic burden for the countries that were studied (Nam 2010). This, along with similar studies, suggest that a better approach to studying air pollution is by looking at the impacts of pollutants all at once.

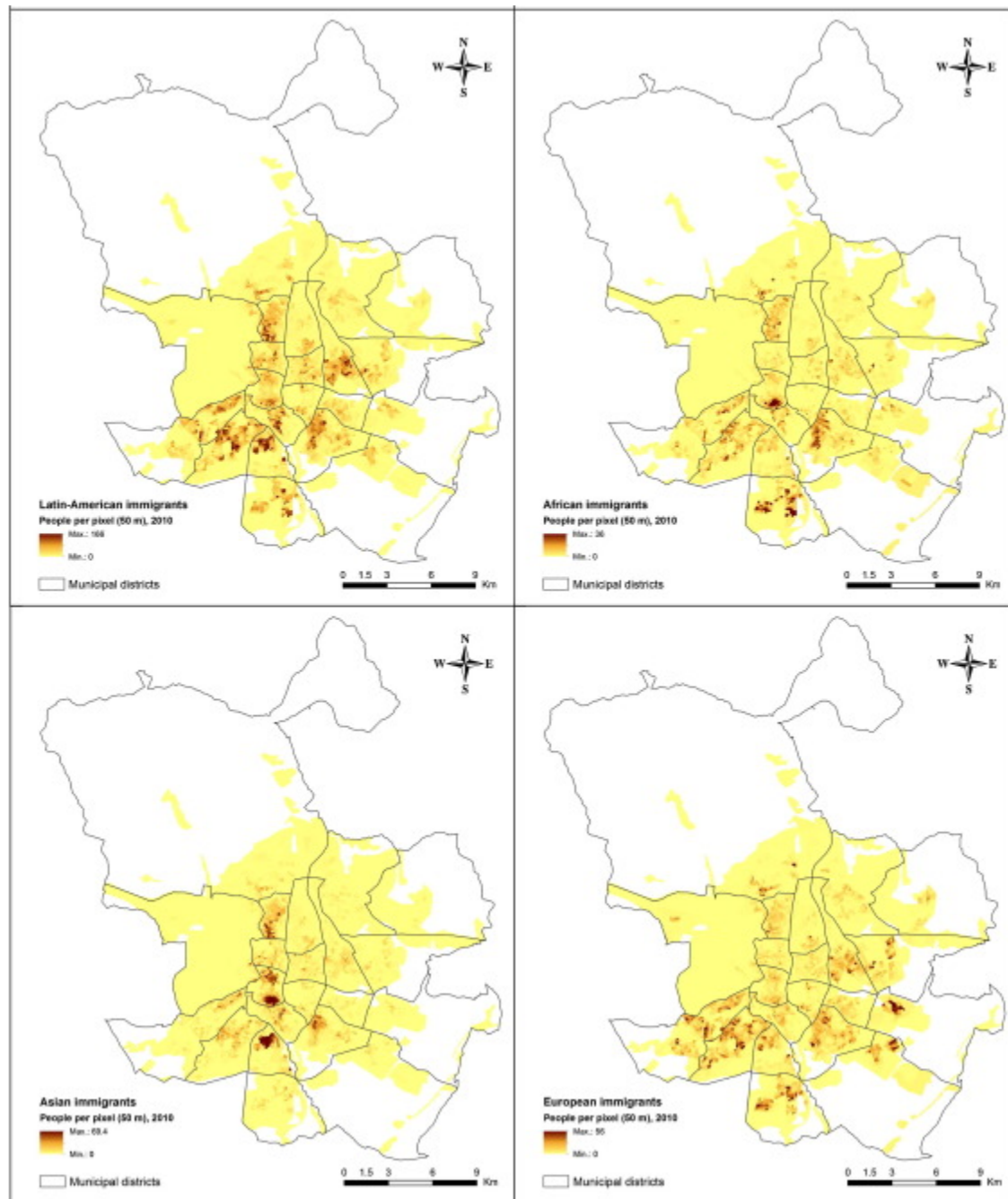
More recently, there has been some literature that has discussed air pollution through the lens of environmental justice. While past scholars focused on the impacts of air pollution on a regional or national level, there has been a push to look at the impacts of pollution on specific populations. In their analysis of air pollution in Madrid and Barcelona, Moreno-Jiménez et al. 2016 look at several populations across different neighborhoods to determine if they suffer from air pollution at disproportionate rates. To do this, they mapped the location of places with high levels of pollution and the areas where immigrant, elderly, and child populations are the largest. Similar to other studies conducted on environmental justice, their research found that Latin American, Asian, African, and European immigrants suffer disproportionately from air pollution (Moreno-Jiménez et al. 2016). Despite their findings, though, they acknowledge that the limited availability of data on the spatial patterns of environmental dangers made their study more difficult to conduct. Still, given new technological advances and growing interest in this type of analysis, the availability of this type of data is likely to increase. The set of images below demonstrate the maps that Moreno-Jiménez et al. 2016 used in their analysis. **Figure One** shows the average concentration of NO<sub>2</sub> pollution in Madrid and Barcelona. **Figure Two** and **Figure Three** display the number of Latin American, Asian, African, and European immigrants per pixel in both cities.

**Figure One**



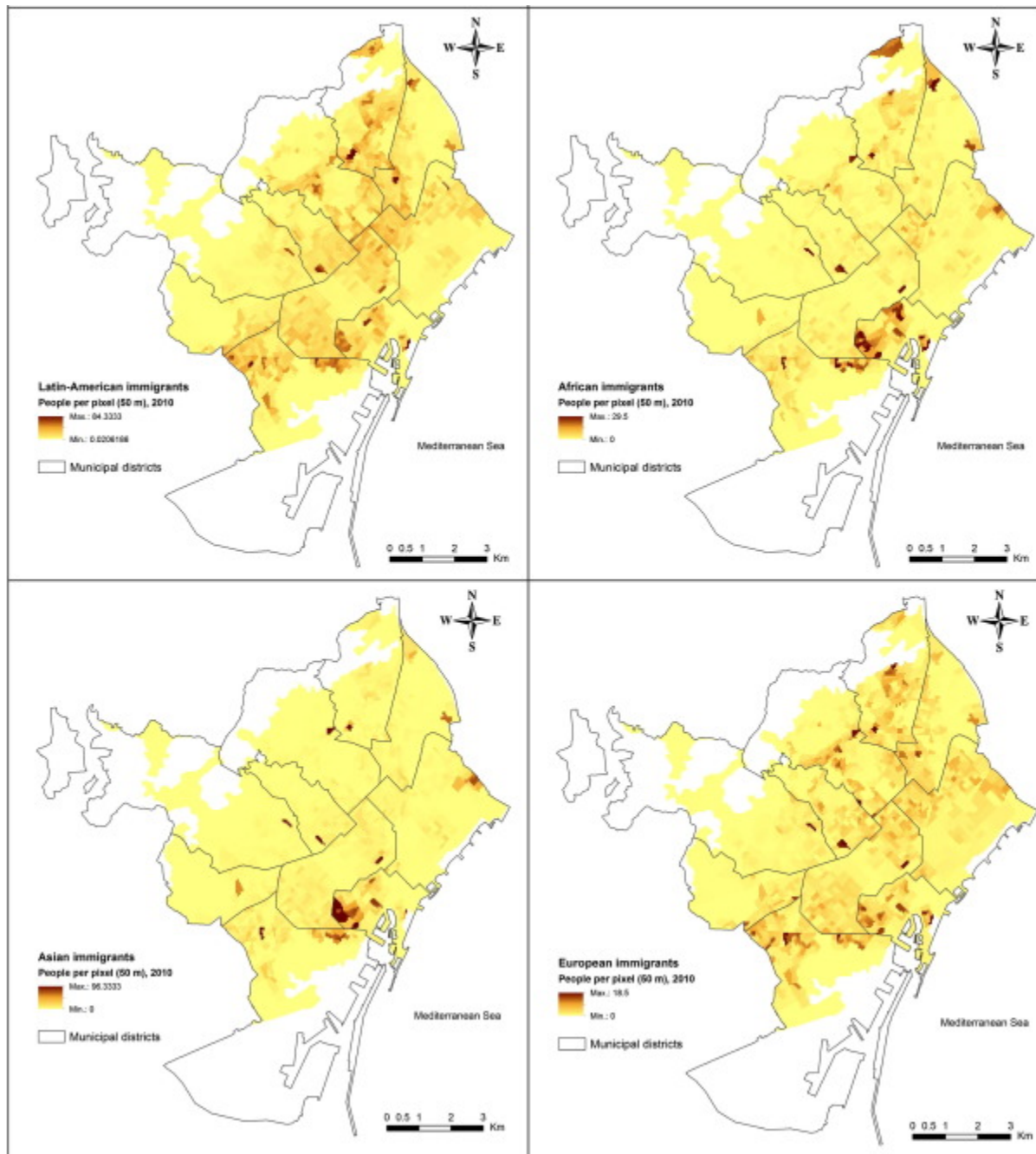
Source: Moreno-Jiménez et al. 2016

**Figure Two**



Source: Moreno-Jiménez et al. 2016

**Figure Three**



Source: Moreno-Jiménez et al. 2016

Analyses that have been conducted in the field of air pollution typically study the impact of a single type of air pollutant on the national or regional level. However, more recent studies

have begun to look at air pollution at the local level which has allowed scholars to better identify the problems that individual populations face. In Spain, this approach has been utilized through an environmental justice lens to determine which populations are more vulnerable to air pollution than others. Due to the focus of this thesis on environmental justice and air pollution, I will be using an approach similar to that of Moreno-Jiménez et al. 2016 but will look more at the causes of disproportionate exposure to air pollutants.

### Defining ‘Immigrants’

Immigrants are often defined as people who move from one country to another in search of better economic or educational opportunities. However, despite the similarity of moving from one place to the next, immigrant experiences can vary drastically. For instance, many people from the United Kingdom move to Spain not necessarily in search of better economic opportunities, but rather for the chance to experience a new culture or way of life. This is vastly different from the motivations that many Eastern European immigrants have which are primarily economic. Additionally, race plays a significant role in shaping the lives of individual immigrants. Some African immigrants, for example, may be discriminated against due to the color of their skin whereas British immigrants would not face this same challenge. Similarly, immigration status is important to consider given that undocumented immigrants are often in a more precarious economic situation than documented individuals. Due to the differing reasons for wanting to immigrate to Spain, the racial discrimination that certain groups face, and immigration status, it is necessary to distinguish what is meant by ‘immigrants’ in this context. Since past studies into immigrants in Spain (which will be discussed later) have focused on Romanians, Moroccans, and other marginalized groups, ‘immigrants’ in this thesis will primarily

exclude immigrants from wealthy Western nations. This is because these immigrants do not face the same degree of social marginalization as people from the Global South or Eastern European countries. Most importantly, however, distinguishing what is meant by ‘immigrants’ is crucial to ensuring that they are not viewed as a monolith, but instead as a diverse group of individuals with unique experiences.

### Discrimination Towards Immigrants

Scholars who look at issues associated with immigration take several different approaches. A widely used approach in the field involves identifying the attitudes (in this case meaning the way that people think about or feel towards others) that non-immigrants have of immigrants within their country. Those who take this approach do so to understand how a country’s view on immigration shapes policy as well as perspectives on globalization. One such study was conducted by Moldes-Anaya et al. 2018 which examined how Spaniards think about immigrants. In this study, native-born Spaniards were asked if they believe that people who come to Spain either take or create jobs and if it is good or bad that people from other countries move there. They were also asked if immigrants take more than they contribute to the economy and if security worsens or improves with the arrival of immigrants. Through interviews with multiple people, Moldes-Anaya et al. 2018 were able to determine that the most popular attitude toward immigration in Spain was a negative one with 41.7% of native-born Spaniards saying that Spanish culture is weakened with the arrival of immigrants compared to 30.4% who say that it is strengthened. This negative view toward immigration is primarily due to the cultural and economic threat that non-immigrants perceive immigrants pose to the country.



Another way in which immigration has been studied is through the barriers to integration that immigrants in Spain face. Generally, scholars take this approach to identify the specific social, economic, and political barriers that limit the wellbeing of immigrant populations. For example, in their research on immigrant livelihoods, Bradatan and Sandu study the economic outcomes of Morrocans and Romanians. The study finds that many Morrocans and Romanians work in either temporary or low-skilled positions which limits their long-term economic success (Bradatan and Sandu 2012). Additionally, they find that while education has some impact on wages, obtaining a college degree does not necessarily translate into significantly higher earnings (Bradatan and Sandu 2012). For immigrant women, the situation is even worse given that they make less money than immigrant men do. The limitation of this analysis, however, is that while it covers a wide range of topics related to overall outcomes, it ignores the environmental aspect of immigrant wellbeing. Through looking at the relationship between air pollution and immigrant populations, this thesis aims to rectify this discrepancy.

## Conclusion

In my literature review, I have identified the debates and methods that scholars have used to study issues associated with environmental justice, air pollution, and immigration. Research on environmental justice, which is often defined as equal access to a healthy environment regardless of socioeconomic status, has been studied from the national level and with a focus on specific environmental hazards. Air pollution studies have looked at the impact of multiple forms of air pollutants and have also identified how certain communities are more prone to exposure than others. Research conducted on immigration typically analyzes the attitudes of natives towards immigrants as well as the economic outcomes of particular immigrant groups. The focus

of previous studies in these three fields will help to shape how I answer my question going forward. As the main area of interest in this thesis, I will primarily use an environmental justice lens to understand why exposure to air pollutants is not equal across all populations in Spain. My analysis of the literature on immigration will be useful in explaining how the issue of air pollution interacts with the economic and social issues that immigrants encounter daily. By combining the literature from all three fields, I will attempt to illustrate the full picture of why immigrants are adversely impacted by air pollution in Spain.

# Chapter Three

## Methodologies

### Introduction

This chapter will describe the methodologies that will be used to answer the central research question. Specifically, this chapter will discuss the physical health indicators as well as the environmental justice approaches that are best suited to understanding why immigrants in Spain are disproportionately impacted by air pollutants. In terms of health indicators, I will discuss the short-term and long-term health impacts of exposure to air pollution with a particular focus on the latter one. Regarding environmental justice, I will consider whether this research question would be better analyzed through a distributive justice or procedural justice lens. By the end of this section, I will have adequately expressed how these methodologies will impact the conclusions reached in the next chapter.

### Metadata

As mentioned in the first chapter, my research will primarily rely on secondary sources including newspapers, academic articles, government reports, and public health journals. In terms of the physical health indicators that will be used, I will look to see if common respiratory diseases such as asthma, chronic bronchitis, lung cancer, and other diseases are present in populations in Spain. These particular indicators are well-suited for this analysis because they

have been associated with exposure to air pollution in urban settings. This data, which is collected at the regional and local levels, is available from the European Journal of Public Health which collects data on behalf of the European Public Health Association (EUPHA) to better inform policy decisions. They also collect information on the short-term and long-term impacts of air pollution on physical health.

### Community-based Research Efforts

Due to the limited availability of data on this topic, I will rely on community-based research efforts to learn more about environmental injustices within Spain. Currently, there are many areas across Spain that are adversely impacted by environmental hazards, but researchers have not yet conducted the necessary analyses to demonstrate why and how certain environmental inequalities exist in the country. Whether or not there is official research done on these environmental hazards though, their impacts are still felt by the individuals living near them. To document these injustices, community activists both in Spain and around the world have helped to create the [Environmental Justice Atlas](#) which contains a map of ongoing environmental injustices (Global Atlas of Environmental Justice 2021). Though not comprehensive, this database contains useful information about the impact of environmental injustices on communities across Spain and how individuals are responding to them. This type of database is crucial for this thesis because it can help to produce information relevant to the central question that has not been addressed in academic journals or government reports. For instance, the Environmental Justice Atlas contains data on the spatial distribution of various types of environmental injustices ranging from water management issues to pollution from

factories. Though academic articles and government reports could create something similar, very few have which makes community-built databases a very important resource going forward.

Another useful tool for my research into environmental justice in the Spanish context is the [Barcelona Laboratory for Urban Environmental Justice and Sustainability](#). Unlike the Environmental Justice Atlas, the Barcelona Laboratory seeks to develop official research on urban planning and policy to promote environmental justice and sustainability (Barcelona Laboratory for Urban Environmental Justice and Sustainability 2021). Similar to the Environmental Justice Atlas, however, it relies heavily on community activists, students, and local organizations to guide its research efforts. In particular, the organization has researched topics such as the impact of green infrastructure on health, urban political ecology, and green gentrification to serve the interests of the community. It engages in these community outreach initiatives because it recognizes that there is a lack of data on environmental injustices in Spain. The information that this organization collects is crucial to understanding how community activists are responding to environmental injustices as well as what policy-makers can do to encourage environmental equality.

### Measures of Physical Health

Most of the literature that looks into the well-being of immigrant populations in Spain tends to center on analyzing mental health and economic outcomes. However, given the focus of this thesis on the impacts of air pollution and the difficulties of gathering economic data at the household level, looking at physical health metrics would be a better indicator of immigrant well-being in this case. This is because most of the impacts from air pollution are directly related to an individual's physical health rather than its mental health or income levels.

Additionally, in much of the research that is conducted on air pollution, scholars tend to focus on analyzing both short-term and long-term health ramifications. For both divisions, self-reported data are used in their respective analyses which is considered to be a good indicator of overall health (Onur & Velamuri 2018). Generally, short-term impacts in this field would be health effects that occur soon after exposure to elevated levels of air pollution that are not related to underlying conditions. This would include a dry throat, heavy coughing, and/or sore eyes (U.K. Department for Environment, Food, and Rural Affairs 2021). For older adults and those with asthma, the health impacts are similar, though they can be more severe even at low levels of pollution. While understanding the short-term implications of air pollution is important, it is less relevant in this context. This is because the short-term implications do not have a significant impact on the overall well-being of immigrant populations, especially when compared to long-term health impacts.

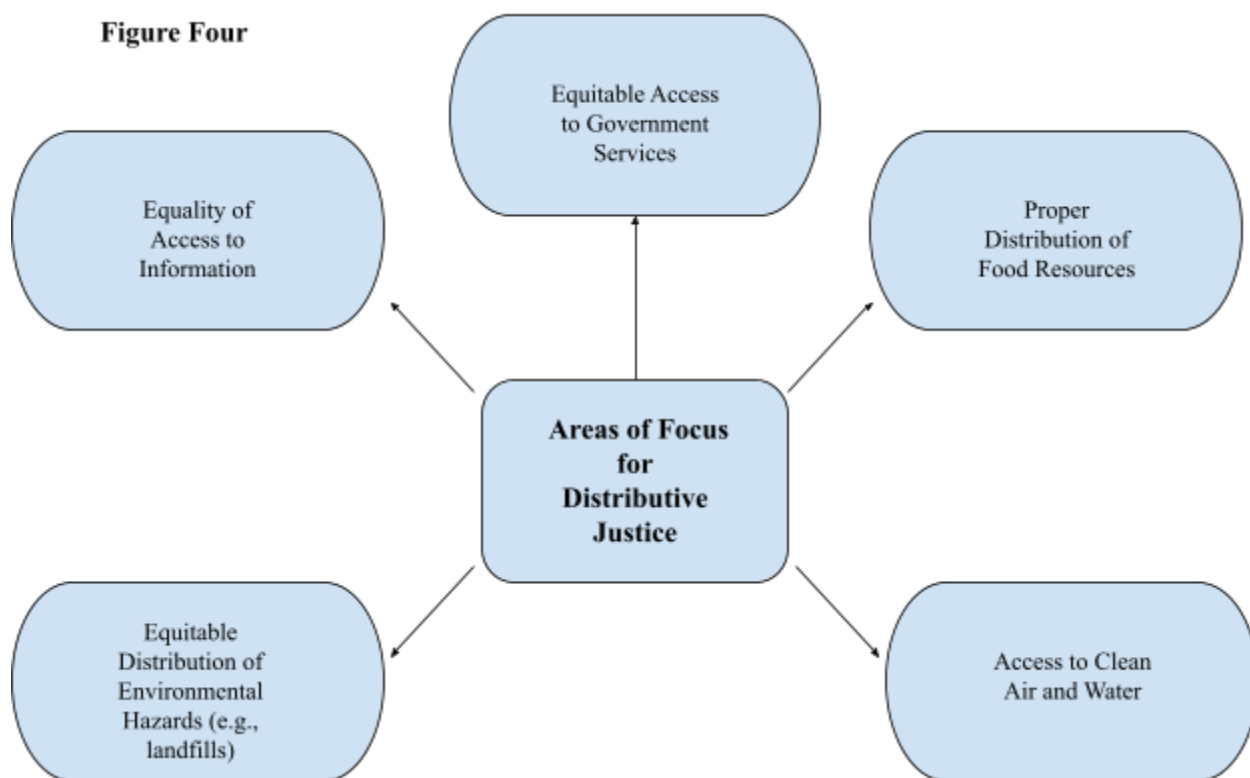
Much of the studies done on air pollution focus on the long-term ramifications of pollutants on the human body. Long-term health impacts are health effects that will last over an extended period of time that cannot be easily cured. For example, chronic bronchitis, asthma, heart disease, and lung cancer all fall under this category (World Health Organization 2018). Additionally, mortality falls under this classification as well though it is less common in wealthier countries (World Health Organization 2018). Looking at the long-term health impacts of exposure is important due to the focus of this thesis on the systemic issues facing immigrant populations in Spain. This is because the ramifications of long-term health consequences can be studied alongside other issues that impact immigrants such as xenophobia and racism. This is crucial for this research because it can help to demonstrate the challenges that immigrants face and how those issues relate to the environmental injustices they encounter in Spain.

## Approaches to Studying Environmental Justice

### Distributive Justice

There are two main approaches that scholars of environmental justice use when conducting research. The first of these approaches looks at environmental issues (as well as relevant social and economic issues) through a distributive justice lens. As mentioned in Chapter One, distributive justice is concerned with the equitable allocation of resources such as clean water based on individual needs. In terms of the specific metrics used within this field to determine if resources are allocated equitably, geographic location and race/ethnicity are commonly used, both of which are going to be used in my thesis. This approach is also related to this thesis in a couple of other ways. First, a distributive justice lens allows us to see which communities in Spain have access to the best air quality and uncover any underlying patterns. Second, it helps us understand the scope of the inequities that exist between immigrant and non-immigrant populations. This is particularly useful because it puts me in a place to study which policies, as well as social forces, have contributed to environmental inequities. Moreover, it makes it much easier to understand environmental justice issues from a procedural justice position. **Figure Four** illustrates some of the areas of interest for analyses related to distributive justice.

**Figure Four**

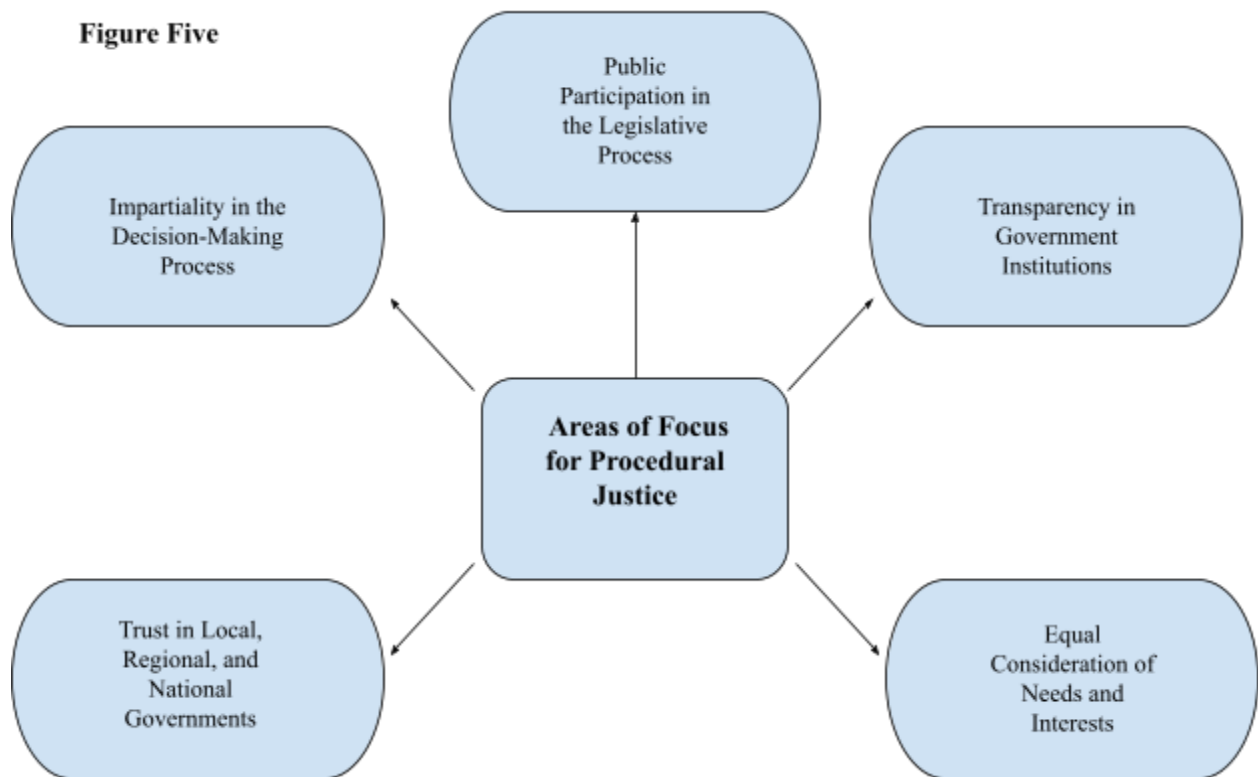


### Procedural Justice

The second approach to studying environmental justice that is widely used examines environmental issues from a procedural justice perspective. Procedural justice refers to the idea of fairness within all decision-making processes. This includes having equitable representation within government entities and policies that protect marginalized social groups against discrimination. By far one of the biggest benefits of this approach is that it looks at systemic barriers to achieving justice for all groups in a society, with particular attention to racial/ethnic minorities and lower-income individuals. In the Spanish context, obstacles that limit access to



procedural justice have already been examined in the legal and political systems, meaning that the use of procedural justice is not a novel approach. Also, this approach will be useful in determining what barriers exist that prevent immigrants from obtaining environmental justice at the local, regional, and national levels. This is especially significant given that there can be many variations in policy both between local governments as well as regional governments. Lastly, given the benefits of using procedural justice as a tool in my research, it will play a large role in my argument in the following chapter. **Figure Five** highlights the focus that studies on procedural justice have and showcases the differences it has with distributive justice. For instance, notice how procedural justice looks more at the decision-making process rather than on the equitable distribution of goods or services.



## Conclusion

In this chapter, I have discussed how I will approach answering why immigrants in Spain are disproportionately impacted by air pollution. Given the focus of this thesis on how systemic issues interact, I will look at the health impacts of air pollution on immigrants by analyzing the consequences of long-term exposure to pollutants. Also, I will use both a distributive justice and procedural justice lens to analyze the question, although I will focus more heavily on the latter. The next chapter will detail my findings as well as my explanation of why this environmental injustice is occurring in Spain.

# Chapter Four

## Analysis

### Introduction

This chapter will analyze why immigrant populations in Spain seem to be disproportionately impacted by air pollution. Specifically, it will focus on the policies and practices of the Spanish government that make it more likely that immigrants live in places with high concentrations of air pollutants. Analyzing the policies enacted by the Spanish government is crucial because it could potentially reveal patterns of systemic discrimination related to the presence of environmental hazards. Additionally, the significant health ramifications of air pollution on individuals will be discussed briefly to provide a deeper understanding of the risks that immigrant communities encounter regularly.

### Health Impacts of Elevated Levels of Pollution

Before discussing why immigrants in Spain are disproportionately impacted by air pollution, it is important to understand how people are harmed by it in the first place. In Spain, the most prevalent air pollutant is nitrogen dioxide (NO<sub>2</sub>) which largely comes from road traffic pollution (Sánchez & Sevillano 2018). Nitrogen dioxide is known to affect the respiratory system by “inhibiting certain pulmonary functions” and “impairing resistance to infection”, particularly for children and asthmatics (Moreno-Jiménez et al. 2016). In the long-term, exposure to

intermediate or high levels of NO<sub>2</sub> has been associated with chronic lung disease as well as the loss of pulmonary capacity. Spain also suffers from elevated levels of PM<sub>10</sub> particulate matter which is made up of dust, ash, and soot (Sánchez & Sevillano 2018). Though this form of pollution is more spread out and is not a big issue in large cities, it still presents a challenge to places such as Málaga and Granada. In terms of health effects, exposure to high levels of PM<sub>10</sub> particulate matter has been directly associated with higher mortality, especially from cardiopulmonary diseases (Pelucchi et al. 2009).

As mentioned previously, this burden is not distributed evenly across populations in Spain. Latin American, Asian, African, and European immigrants are all exposed to higher levels of air pollution and therefore face greater health impacts (Moreno-Jiménez et al. 2016). However, the health ramifications of air pollution do not exist in a vacuum. Often, the challenges imposed by elevated levels of pollution only add to the issues that immigrant communities face. For example, immigrants in Spain regularly report feeling discriminated against by native-born Spaniards primarily as a result of their legal status and physical appearance (Agudelo-Suárez 2011). Over time, this can lead to poorer mental health outcomes and create health disparities for immigrant populations in Spanish society. The prevalence of discrimination along with the health ramifications of air pollution creates a dual burden for immigrants which makes it harder for them to adapt to their new country.

### The Causes of Disproportionate Exposure

## Discrimination in the Labor Market

In Spain, immigration policy is ambiguous and contradictory with scholars often disagreeing on the specific rights that immigrants have. For instance, though some experts argue that immigrants have a right to public education and health care, others citing government decrees claim that the opposite is true (Calavita 1998). For immigrants, this lack of clarity on what services they have access to can lead to an intense feeling of insecurity as well as economic hardship. One way in which immigrant populations face economic hardship as a result of Spanish immigration policy revolves around work permits. Under current Spanish law, a worker must have a work permit to file a complaint against their employer (Calavita 1998). The problem with this, however, is that it makes it virtually impossible for undocumented immigrants to report abuses in the workplace because they cannot receive a work permit due to their legal status. This makes it easier for employers to disregard labor standards and pay undocumented workers low wages. Though some undocumented workers try to address this issue by pursuing the legalization of their status, many have been fired when their bosses find out (Valls et al. 1995). Additionally, while this issue primarily impacts undocumented workers, documented individuals can be impacted by it as well. If a work permit is allowed to expire, a documented resident loses their legal status which puts them in the same precarious situation as an undocumented worker.

Immigrants in Spain also have a difficult time finding good-paying jobs. As the Spanish economy recovered from the Great Recession of 2008, there was an increase in the number of jobs available in agriculture, construction, and household care (Bradatan and Sandu 2012). To attract workers to these sectors, the Spanish government-sponsored programs that sought to hire foreign workers despite there being natives available to fill those positions. Gradually, this has created a two-tiered workforce in which immigrants work in temporary and low-skilled positions

whereas native-born Spaniards have access to higher-paying jobs (Bradatan and Sandu 2012). Though immigrants suffer tremendously under this economic system, they also face other forms of discrimination such as social marginalization.

### Social Marginalization

Since at least the late 2000s, the number of hate crimes reported in Spain has been increasing with 1,706 cases being reported in 2019 alone (Office for Democratic Institutions and Human Rights 2021). Of the cases in 2019, 581 of them were reported to have occurred as a result of racism/xenophobia or bias against Muslims. Though this increase in violence is alarming, it is reminiscent of the longstanding racism and social exclusion present in both Spanish society and its policies on immigration. Unlike countries in the Americas where the acquisition of citizenship is based on the principle of *jus soli* (which states that citizenship should be granted based on where a person is born), Spain, along with most of the world, uses a concept known as *jus sanguinis* (Calavita 1998). *Jus sanguinis* (which emphasizes the importance of blood in obtaining citizenship), is problematic because it makes it very difficult for those without Spanish blood to receive the full rights of citizenship. This means, for example, that the children of noncitizens born in Spain may not necessarily become Spanish citizens and could be considered to be undocumented (Calavita 1998). The use of *jus sanguinis* may also impact how native-born Spaniards view immigrants. Given that *jus sanguinis* focuses on the importance of blood in being considered Spanish, many natives may not see immigrants as truly Spanish unless they have recent Spanish ancestry. This exclusionary view encourages native-born Spaniards to develop negative attitudes towards immigrants thereby making it more difficult for them to integrate into society.

Another way in which immigrant populations in Spain face social marginalization happens in the housing market. Likely as a result of the discriminatory behavior of property owners and renters, immigrants find it more difficult to rent homes than natives do in areas where the majority of people are native-born Spaniards (Bosch et al. 2013). This discriminatory behavior is most evident in the response rate to housing applications where the rate is 30 percentage points lower for immigrants than for natives (Bosch et al. 2013). Over time, this discriminatory behavior perpetuates the spatial segregation of immigrant/minority groups and helps to create ethnic enclaves in large urban areas. This is detrimental to immigrants because it limits where they can live and creates a sense of social isolation within their communities. When coupled with the discrimination they face as a result of *jus sanguinis*, housing discrimination can be seen as yet another barrier that immigrant populations must overcome to establish a dignified life in Spain.

### The Environmental Connection

Social marginalization leads immigrants in Spain to move to areas with high levels of air pollution. As mentioned in the previous section, prejudice towards immigrant groups leads some property owners and renters to deny immigrants housing in areas where the population is majority native. As a result of this, immigrants are forced to live in neighborhoods with large immigrant communities where the concentration of air pollutants such as NO<sub>2</sub> can be high (Moreno-Jiménez et al. 2016). This places a disproportionate burden on immigrant communities which cannot be easily addressed. Since immigrants are unlikely to get housing in other areas due to discrimination, they are forced to suffer the consequences of living in an area with high levels of air pollution. Even if immigrants could leave, though, many would decide that it is not

in their best interest to do so. This is because immigrants are wary of the racial discrimination they may face in majority native areas or the hate crimes they may become victims of.

To combat this form of environmental injustice, some activists have turned to the Spanish legal system. As a result of the Aarhus Convention of 1998 which established the right of everyone in Europe to obtain environmental justice, Spain adopted measures that were meant to encourage more citizen participation in the decision-making process. However, a recent analysis conducted by Ruiz de Apodaca in 2018, suggests that many of the same problems that existed before the adoption of the Aarhus Convention remain. Of the problems that he mentions, the most important problem that the country is still facing is that of the excessive cost of litigation (Ruiz 2018). Given that it can take months or even years for a case to be fully processed by the Spanish legal system, plaintiffs often have to spend thousands of dollars to litigate environmental issues in the court system (Ruiz 2018). For immigrants which have worse economic outcomes due to immigration policies and government-sponsored programs that encourage them to work in low-paying jobs, the cost of litigation can be an even larger burden. The result of this system is that immigrants are unable to access environmental justice in the judicial system and are forced to remain in the same situation on account of housing discrimination.

## Conclusion

In this chapter, I have discussed the health ramifications that immigrants face after being exposed to high concentrations of air pollution. Nitrogen dioxide (NO<sub>2</sub>), which is the most common air pollutant in Spain, has been shown to negatively impact the respiratory system while PM<sub>10</sub> particulate matter has been associated with higher mortality rates. Due to the discrimination in the labor market that they encounter as a consequence of immigration policies,



immigrants have worse economic outcomes than non-immigrants do. Also, state-sponsored programs have created a two-tiered workforce in Spain with immigrants working in low-paying, temporary positions whereas natives have access to higher-paying, long-term jobs. Immigrant communities also experience a significant degree of social marginalization that impacts their ability to live in neighborhoods that are majority native. Over time, this has resulted in ethnic segregation with immigrants concentrating in places with elevated levels of pollution. Though some could attempt to change this by going through the judicial system, the excessive cost of litigation in the courts will make it very difficult for immigrants to make progress. In the next and final chapter, I will discuss the implications of my research and suggest possible topics for future research into this field.

# Chapter Five

## Conclusion

### Review

Every day, millions of immigrants in Spain are exposed to elevated levels of air pollution and will likely develop serious health issues in the future as a consequence of this. Throughout this thesis, I set out to describe which factors lead immigrants to be exposed to such conditions and how they relate to the other struggles that immigrants encounter as well. Specifically, I found that discriminatory immigration policies and social marginalization lead immigrants to cluster in areas where the amount of air pollution present is disproportionately high. I summarize my findings for each of the two factors below.

Social marginalization is a significant contributing factor to the environmental injustices that immigrant communities are victims of. Spain, like most countries in the world, uses the concept of *jus sanguinis* to help decide how to grant individuals citizenship. Since the concept emphasizes the need of having a blood connection to a citizen, many natives only regard those with Spanish ancestry as truly Spanish. This creates social divisions within Spain as it encourages natives to develop negative views towards immigrants and also makes it harder for immigrants to integrate into society. Moreover, some of this discrimination is manifested in other ways, but most notably in the housing market. Owing to the prejudices of renters and property owners, immigrants are less likely to live in areas where the majority of the population is native

(Bosch et al. 2013). This forces immigrants to live in majority immigrant areas which have been shown to have higher concentrations of air pollution such as NO<sub>2</sub> (Moreno-Jiménez et al. 2016). Though some immigrants try to leave, many choose to stay to avoid the racial discrimination and hate crimes they would encounter in places with a low number of immigrants.

Spanish immigration policies also play a large role in perpetuating environmental injustices. Currently, due to how the work permit system is set up in Spain, immigrants can very easily lose their legal status and therefore become undocumented (Calavita 1998). This puts them in a vulnerable position because it allows their employer to pay them low wages and violate labor standards since those without a work permit cannot file a labor complaint. Additionally, policies put in place meant to attract foreign workers to the country have helped create a two-tiered workforce in the country (Bradatan and Sandu 2012). While native-born Spaniards are able to work in long-term and relatively high-paying jobs, immigrants are forced to work in low-paying and temporary ones. Over time, this has created a situation in which immigrants have worse economic outcomes than non-immigrants do which can make it harder for them to cover the costs of litigating issues in the courts, thereby limiting their ability to obtain environmental justice.

### Limitations

Given that environmental justice discourses in Spain are still only just beginning to develop, relatively little research has been done on this topic. Although the Aarhus Convention prompted some initial discussions on access to environmental justice in the late 1990s and early 2000s, a significant shift in Spanish policy has not occurred since then. Additionally, any research exploring the connection between environmental justice and race will face difficulties

due to the lack of official data collected by the Spanish government on race/ethnicity (Moreno-Jiménez et al. 2016). Though the problems that arise from this can largely be addressed by relying on immigration data, it is not a perfect solution particularly since it may not capture the impact of discrimination on second-generation immigrants. To remedy this, Spanish policymakers should invest more money into collecting data on race/ethnicity not only to help answer questions about environmental justice, but also to uncover other potential patterns of discrimination in areas such as housing.

### Suggestions for Future Research

As the impacts of climate change worsen around the world, the imperative to conduct research on issues related to environmental justice will grow. Given this, future research topics should focus on the impact of climate change on racial/ethnic groups in Spain to determine if they will be disproportionately impacted by its effects. This approach would be useful for answering questions related to climate justice which are becoming more relevant as environmental movements demand a just transition to a clean energy economy. Moreover, as the European Union moves to implement its Green Deal, understanding how climate change will impact certain communities is crucial in deciding how to invest resources equitably (European Commission 2021). The conclusions reached from research on climate justice in both Europe and Spain can serve as an example of how to conduct studies on this topic for other regions of the world. Through investing time and resources into comprehending the causes of environmental and climate injustices, scholars can help to create a more equitable and just world.

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