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## ABSTRACT

This dissertation introduces the ‘Institutional Life Course Framework,’ a novel theoretical lens, to explore health inequalities. Through three empirical chapters, this work examines distinct aspects of health disparities by integrating institutional contexts with life course trajectories. Chapter one addresses health disparities among Latin American immigrants in the U.S., emphasizing the influence of pre-migration exposures from the country of origin. The findings reveal that exposure to higher welfare generosity and democratic contexts in childhood, prior to migration, is correlated with improved health in adulthood, thereby emphasizing the critical role of pre-migration exposures in understanding health disparities among immigrants. In the subsequent chapter, the connection between life course trajectories in work and family dimensions and women’s mental health in later life is explored, with a focus on the moderating role of gendered welfare state policies across European countries. The results indicate that life course differentiation in work and family domains can adversely impact mental health, especially for consistently employed women. The study further emphasizes the importance of welfare state configurations in understanding these effects. Chapter three delves into the retirement patterns of Latin American immigrants in the U.S. between ages 60 to 70 and their health implications. Using sequence analysis, seven retirement patterns and their associated health outcomes are identified, emphasizing the role of intersectionality in shaping retirement decisions and subsequent health experiences. The findings highlight the need for targeted interventions and inclusive policies promoting health equity and social justice in later life. In conclusion, while the dissertation presents specific contexts like Latin American immigrants and women’s life courses, the Institutional Life Course Framework’s versatility offers opportunities for studying health disparities across diverse populations. One such potential application includes understanding the health inequalities within the LGBT community, with emphasis on policy shifts and individual life courses. Through this dissertation, the aim is not only to uncover the complexities of health inequalities but also to lay the groundwork for interventions and informed policy decisions.

# CHAPTER 1

## INTRODUCTION

The complexities of human lives are profoundly influenced by the institutional structures within which they unfold. From cradle to grave, our life trajectories are shaped not only by individual choices but also by the regulatory, normative, and cultural institutions that both enable and restrict our actions. Moreover, with the rise in global mobility, an increasing number of individuals experience diverse institutional exposures as they move between countries. These considerations form the foundation of the theoretical framework I propose to explore in this dissertation. I argue that this framework can shed light on the intricate ways institutional contexts influence health disparities among individuals.

This introductory chapter offers a preliminary overview of the literature on health and health disparities that support my theoretical premise. First, I discuss the primary theories that sociologists have drawn upon to clarify health inequalities and disparities. I emphasize the field's evolution from focusing solely on socioeconomic differences to incorporating other social categories that contribute to health disparities, including race/ethnicity, age, gender identity, and sexual orientation. I then shift my focus to the convergence of political sociology and population health, examining how the literature on welfare states, social policy, and globalization has informed the sociology of health and illness. Finally, I introduce my Institutional Life Course Framework for studying health inequalities, detailing the novel dimensions this theoretical perspective brings to the existing literature.

Subsequently, I outline the three main chapters of my dissertation. These chapters represent three distinct but interconnected studies, all anchored in the proposed theoretical framework. Two chapters center on Latin American immigrants in the United States, emphasizing the need to grasp their life trajectories in a more comprehensive manner to comprehend their health status in later years. Another chapter probes into the life courses and health of European women, exploring how the dynamic interplay between shifting policy contexts and life courses in work and family spheres can affect women's mental health.

These studies aim to enrich the field of sociology of health and illness by highlighting the multifaceted nature of institutional exposures and their ramifications on health disparities. In essence, this research seeks to deepen our comprehension of how life courses interact with evolving institutional landscapes, ultimately impacting health outcomes.

## **1.1 Towards an Institutional Life Course Framework for the Study of Health Disparities**

### **1.1.1 The development of a sociological lens for the study of health inequalities**

Health disparities and inequalities are consistently scrutinized subjects due to their interdisciplinary nature and relevance in policymaking. The volume of research endeavors to dissect the causes and consequences of these health inequalities is considerable. As sociologists, our foundation lies in the examination of social stratification, and this forms the basis of the theories we employ to elucidate health inequalities, primarily focusing on the role of social stratification in shaping population health. The broader sociological audience has shown significant interest in health disparities, as differences in health outcomes across social groups have become a way to understand how social structures get under the skin. In this section, I aim to explore what we understand by health disparities. I will delve into non-exhaustive and non-mutually exclusive perspectives that seek to explain health disparities. Following this, I will consider the highly influential fundamental cause theory (Link and Phelan 1995), arguing its flexibility as an overarching framework for most perspectives that attempt to explain health inequalities across social groups. Lastly, I will highlight the need for life course comparative research to enhance our understanding of this fundamental cause perspective, advocating for an intersectional and comparative viewpoint rather than creating new categories.

Inequality sits at the core of what we as sociologists study. However, defining health

inequalities or disparities is not as straightforward as one might assume. For instance, if we consider health distribution in a population, health inequalities could be understood as the differences between individuals with better health and those with worse health. In the early 2000s, a World Health Organization team favored an approach where they argued that measuring overall health differences among ungrouped individuals was the only way to avoid obscuring within-group differences (Braveman 2006). However, if we comprehend health as the result of a social process where structures and identities are at play, health disparities cannot be understood in isolation. They should be interpreted as the differences between socially constructed categories. Margaret Whitehead (1991) provides a concise definition, positing that health inequalities refer to avoidable, unjust, and unfair health differences, and that health equity is achieved when all individuals have fair opportunities to attain their full health potential. Hence, any systematic differences between groups not clearly explainable by biological factors should be studied to determine the mechanisms linking individuals' social conditions and their health status.

Psychosocial theories explain health inequalities as biological responses to human interactions. These theories aim to understand the mechanisms that render certain individuals more or less susceptible to diseases (Cassel 1976). Under these theories, social environments are responsible for modifying specific biological factors that influence individual vulnerability to developing particular diseases. This emphasizes the need for research to understand the circumstances under which these biological mechanisms are altered. The concept of 'allostatic load' introduced the idea that psychosocial stressors could be pathogenic, rather than merely altering susceptibility levels (Delpierre et al. 2016). This provides insight into how the onset of cancer, for instance, can be partly attributed to the life course experience of negative emotions leading to endocrine dysfunction, subsequently increasing cancer risk (Chen et al. 2018). Socioeconomic status (SES) remains pertinent in this approach, as it explains variations in psychosocial stressors. Typically, individuals of lower SES experience more stress due to financial constraints and possess fewer resources to manage this stress

(Hatch and Dohrenwend 2007; Marmot et al. 2008; von Wagner et al. 2011). Here, SES acts as a mediating factor rather than a direct structural determinant, impacting health through an accelerated aging process at the cellular level (Adler and Stewart 2010).

The selection hypothesis stands out as another significant theory in the health inequalities and population health domain. This theory posits health inequalities as the cause, rather than the outcome, of socioeconomic disparities (Foverskov and Holm 2016). The theory asserts that observed health status differences between socioeconomically advantaged and disadvantaged groups arise because those who are sicker tend to be occupationally disadvantaged and, consequently, financially penalized (Blane, Smith, and Bartley 1993). Cardano, Costa, and Demaria (2004) describe the selection hypothesis as akin to social Darwinism. In this view, if health isn't influenced by socioeconomic or broad social circumstances, a biological selection mechanism must be at work, positioning the healthiest individuals atop the social hierarchy. Considering a life course perspective, a significant body of research suggests that this selection mechanism primarily takes effect during childhood (Case and Paxson 2011). Here, poor health in childhood limits educational attainment, subsequently reducing the likelihood of achieving a higher socioeconomic status in adulthood (Smith 2004, 2009).

### Fundamental Cause Theory: beyond class, education, and income

Given these theories, we, as sociologists, must recognize social stratification as a crucial determinant of health. While childhood health undoubtedly influences future socioeconomic status, a pressing question emerges: How are a child's health status shaped by their socioeconomic conditions, gender, or race? In response, one of the most cited theoretical papers in the sociology of health and illness is Link and Phelan's 'Social Conditions as Fundamental Cause of Disease' (1995). The paper proposes a relational approach to health inequalities, asserting that health status stems from social conditions or factors grounded in interpersonal relationships. They contend that the enduring association between socioeconomic conditions

and health demands the interpretation of socioeconomic status as a fundamental cause of health.

Socioeconomic status furnishes flexible resources that enhance health, irrespective of the mechanisms tying socioeconomic status to health at any given moment. Link and Phelan suggest that even if we discover a cure for a disease and make it universally available, socioeconomic status will still empower advantaged individuals to ‘purchase’ better health by sidestepping other emerging diseases. As they articulate:

If no new diseases emerged (such as AIDS), no new risks developed (such as pollutants), no new knowledge about risks emerged (as about cigarette smoking in the 1950s and 1960s), and no new treatments were developed (such as heart transplants), the concept of fundamental social causes would not apply (p. 87).

Significantly, from a fundamental cause standpoint, unlike the psychosocial theory, the objective of social science research in the realm of health is not to pinpoint the ever-changing mechanisms that tether a fundamental cause to disease. The emphasis should shift to recognizing and subsequently eliminating these fundamental causes. Link and Phelan maintain that targeting these mechanisms proves ineffective, as new ones will invariably supplant them. To truly combat health inequalities, we must address and abolish their fundamental causes.

## Expanding the Fundamental Cause Theory: Racism as a Fundamental Cause of Health Inequalities

The inception of the fundamental cause theory had sociologists primarily concentrating on class (Marmot et al. 1991), education (Baker et al. 2011), and income (Ogunsina, Dibaba, and Akinyemiju 2018) when examining health inequalities. These factors, as the primary societal stratification instruments, have consistently anchored sociological research. Yet, two decades after Link and Phelan introduced their fundamental cause theory with socioeconomic status



as its centerpiece, they observed consistent empirical correlations between race and health status in the U.S. This observation prompted them to expand their theory in ‘Is Racism a Fundamental Cause of Inequalities in Health?’ (Phelan and Link 2015).

In this work, they propose that the enduring health outcome disparities between Black and White Americans—persistent across various times and contexts and even after accounting for socioeconomic status—align with the fundamental cause theory. This theory suggests that novel mechanisms supplant the old, defunct ones that connect a fundamental cause to health status. Due to systemic racism, White Americans possess a suite of flexible, race-related resources, such as non-occupational prestige, power, favorable social connections, and greater freedoms, which they can utilize to bolster their health. Racism, therefore, bridges race (specifically being Black) with health, manifesting in a higher prevalence of disease through stress, limited healthcare access, and neighborhood effects intensified by racial segregation.

Deeming racism a fundamental cause of disease and health disparities calls for a shift from individual attributes to the overarching social structure (Krieger et al. 2013). This perspective was implicit even in the initial formulation of the fundamental cause theory, but the revised version accentuates the structural dimension of fundamental causes more overtly. Regarding racism, it is not race per se that acts as a disease’s fundamental cause. Race, being a socially constructed category, assumes importance only within a framework where it functions as a stratifying mechanism. Theoretically,  $X$  is a fundamental cause of  $Y$  if  $X$  provides access to a diverse resource pool, wherein superior resources lead to better outcomes in a specific domain (Phelan and Link 2015, 314). This refined understanding of the fundamental causes of health inequalities fosters a holistic grasp of these disparities across all stratification forms, provided a stratification system directs the distribution of versatile resources. Let’s take a look, for instance, to how gender can be understood as a fundamental cause of health in the context of a patriarchal stratification system.

## Other forms of stratification

Gender, as a well-established axis of stratification, has been thoroughly explored in sociology. Feminist scholars have illuminated how patriarchy comparatively disadvantages women by imposing gender roles that limit their access to material resources. This intricate system consistently favors men over women in terms of power dynamics and responsibilities across multiple facets of social life, extending beyond mere material resources (Gkiouleka et al. 2018). However, while studies highlight health disparities across genders, they uncover a paradox: women generally outlive men. A more profound examination of various health indicators beyond mere mortality reveals that, despite enjoying greater longevity, women experience more health challenges (Bird and Rieker 2008). For instance, women report lower self-rated health (Idler 2003; Yang and Lee 2009), suffer from more nonfatal chronic conditions, and are more susceptible to functional limitations (Read and Gorman 2010; Verbrugge 1985).

However, the discourse surrounding gender and health is far from straightforward and exceeds the purview of this introduction. The persistence of gender-based health disparities, in all their complexity, raises a vital question: which underlying social structure or power dynamic gives rise to these disparities? Patriarchy appears as the most plausible answer, prompting sociologists to delve deeper into gender inequalities (Homan 2019). Although empirical studies have underscored this relationship, academic discourse on the nexus between patriarchal structures and health is still nascent (Stanistreet 2005).

Further muddying the waters is the intersection of patriarchy with sexual orientation and non-conforming gender identities. Studies show that LGB individuals, especially older adults, are at heightened risk for poor mental health, adverse health behaviors like smoking and drinking, and daily activity limitations (Fredriksen-Goldsen et al. 2013). Moreover, challenges such as substance abuse, overweight issues, obesity, and tobacco use, which are more prevalent among the LGB population, rank among top public health concerns (Mayer et al. 2008). Mayer (2008) lists four primary barriers for LGBT individuals seeking healthcare,

including reluctance to reveal sexual orientation; a shortage of adept providers familiar with LGB issues; structural barriers hindering health insurance access and affecting decision-making rights for LGBT individuals and their partners; and a lack of tailored preventive services. Coupled with stigma and discrimination, these factors underscore patriarchy—or heterosexism—as a core determinant of health disparities between heterosexual and LGB individuals.

Beyond gender, race, and SES, modern states now acknowledge citizenship and migration status as stratification dimensions. Torres and Waldinger (2015) delve into civic stratification arising from the confluence of international migration and regulatory systems that institute legal differences between citizens and non-citizens. Depending on their status, migrants grapple with varying degrees of exclusion from citizens' rights (Bosniak 2006; Motomura 2014). Torres and Waldinger probe how migration status impacts healthcare access on both domestic and international fronts. Their findings largely align with the hypothesis: undocumented immigrants are sidelined from healthcare, both in the US and globally, even after accounting for health status, insurance, and other demographic and socioeconomic determinants (Torres and Waldinger 2015). However, the implications of these findings extend beyond the immigrant population. As shown by Schut and Boen (2022), state immigration policies in the U.S. impact not just undocumented immigrants but also naturalized and U.S.-born Latinx individuals. This broader impact is attributed to shared experiences and positions within structural hierarchies, which may expose these groups to stigmatization, fear, and discrimination.

Supplementing this viewpoint, Bakhtiari, Olafsdottir, and Beckfield (2018) highlight significant health disparities between migrants and native populations across European nations. These disparities drastically reduce or even vanish in highly integrative migrant settings. The interplay between migration and the institutional structures governing it results in stratification that impacts a specific group's resource access, subsequently influencing their health. Such patterns bolster the interpretation of civic stratification as a fundamental cause

of disease.

## A call for a life course, intersectional approach to health inequalities

Given the significant influence of social categories on health and the pressing need to theorize their connection to health disparities, I advocate for a shift towards a life course approach. This approach would emphasize the contextual and historical dimensions of the sociology of health disparities. Link and Phelan argue that to effectively address health inequalities, we must directly confront their root causes. This perspective compels researchers to examine how various stratification systems might produce different levels of inequality. It is crucial to understand the temporal dynamics embedded within these stratification systems. Indeed, an individual's health status reflects the cumulative impact of the systems they have navigated throughout their lives. Therefore, these systems must be understood within their historical context and seen as evolving entities that influence individuals throughout their life course.

In conclusion, it is important to underscore that not every potential stratification layer necessarily serves as a primary factor in health disparities. Sociologists must stay alert to new stratification trends highlighted in other sociological areas. Adopting an intersectional lens, as suggested by Gkiouleka and colleagues (2018), is essential when analyzing the underlying causes of health disparities. Throughout their lives, individuals might face varying degrees of stratification across different spheres. Fully grasping these nuanced exposures is pivotal in comprehending the origins of health disparities.

### 1.1.2 The distribution of health as political in nature

When addressing health inequalities and disparities, it's imperative to understand the inherently political nature of health distribution. Studying social stratification as it shapes population health lays the groundwork for the sociological theories used to elucidate these disparities. As we delve deeper into these theories, the influence of sociopolitical contexts on health distribution across varied facets of social life becomes more apparent. This intersec-

tion of political sociology with health illuminates the effects of power structures on health disparities and prompts vital questions about the roles of welfare states, political institutions, and the broader implications of phenomena like globalization on health outcomes.

Health disparities between societies, as well as the distinct character of these disparities in different locations, prompt us to question the nexus between political sociology, health, and illness. Why, for example, do educational gradients in health vary from one country to another? (Elo 2009) The literature amalgamating political sociology with the sociology of health and illness seeks to address such inquiries. It provides a contextual viewpoint on social stratification across various dimensions—be it class, age, gender, sexual orientation, race, or ethnicity—and its bearing on health. Because this line of research is the base of the Institutional Life Course Framework I propose here, I will now discuss the major insights from this research, focusing on how political sociology enriches our grasp of health distribution, the primary methodologies employed, and the distinct challenges this interdisciplinary approach presents to scholars delving into population health distribution.

Political sociological studies identify three primary areas of interest for population health researchers: (1) literature on welfare states, arguably the most mature domain; (2) literature on political institutions, examining ties between democratic structures, the political inclusion of minorities, and overall population health; and (3) an emerging body of work that probes the impacts of globalization on health disparities, urging a broader analytical scope that surpasses national boundaries.

In their quest to discern how political structures mold health disparities, some scholars have crafted an institutional theory centered on health inequalities (Beckfield et al. 2015; Gkiouleka et al. 2018). This theory departs from traditional institutional theories in sociology, which typically explore the origins of institutions. Conversely, the institutional theory of health inequalities aims to fathom the effects of pre-existing institutions, adopting an ‘old institutionalism’ perspective that emphasizes laws, policies, and institutional agents.

This theoretical lens attempts to pinpoint how the foundational ‘rules of the game’ in

the political economy impact health disparities (Beckfield et al. 2015). Within this framework, three key mechanisms are identified: (1) redistribution, (2) compression, and (3) mediation. Redistribution pertains to the ability of institutions to reshape health determinants, such as income and wealth; compression involves the direct provision of health care services; and mediation examines how institutional setups can diminish health inequalities linked to specific social categories—like education—without necessarily modifying the distribution of the category itself, thus indicating that mediation can temper the influence of a social category on health.

These three mechanisms provide a basis for hypothesizing about how institutional arrangements can influence health disparities. While not explicitly discussed within this framework, it also paves the way for studying diverse political institutions influencing the social determinants of health beyond mere socioeconomic status. The institutional paradigm proves adaptable, enabling investigations into, for example, how welfare states affect health disparities and evaluations of institutions impacting gender disparities, laws governing the political integration of minority groups, or legal or regulations safeguarding LGBTQ+ groups from discrimination. I interpret the aim of the framework as to discern how these interactions might modify the influence these categories exert on health in varied settings.

## The role of the welfare state in explaining health disparities

The welfare state is a primary focus for scholars investigating political institutions, as it plays a central role in welfare services, transfers, and policies related to well-being (Bambra and Eikemo 2008; Esping-Andersen 1990). The welfare state has the power to modify individuals' opportunities in various social domains.

Esping-Andersen's (1990) 'The Worlds of Welfare Capitalism' provides a renowned typology of welfare states, outlining how they reduce market dependency for a living wage (de-commodifying labor), stratify individuals, and assign roles to the state, market, and family in welfare provision. Esping-Andersen's typology breaks down welfare states into three

categories: (1) liberal, represented by countries such as the UK and the US, characterized by low de-commodification levels, high stratification levels, and a central market role in welfare provision; (2) social democratic, exemplified by Nordic countries, characterized by high de-commodification levels, low stratification levels, and a key state role in welfare provision; and (3) corporatist, illustrated by countries like Germany, characterized by means-tested policies that maintain prior stratification and depend heavily on the family for welfare provision. These ideal types translate into different forms of work and family policies, thereby shaping work and family experiences (Corna 2013)\*.

Leveraging this typology—and variants derived from Esping-Andersen’s original model—researchers have probed how welfare states influence the relationship between a person’s social structure position and their health (e.g., Bambra et al. 2009; Espelt et al. 2008; Sacker, Worts, and McDonough 2011). For instance, using two waves of the European Social Survey, Bambra and Eikemo (2008) examined the relationship between unemployment and health across European welfare states. Their study, which adapts a typology of welfare states, shows that while the link between unemployment and health remains consistent across the 23 European countries they surveyed, the relationship’s magnitude varies significantly across welfare regimes. For example, in countries with an Anglo-Saxon welfare regime—characterized by minimal state welfare provision, means-testing, and modest social protection levels—the health status gap between employed and unemployed individuals is larger than in countries with Bismarckian and Scandinavian regimes. The former features fairly generous welfare policies with a significant stratification component, while the latter is characterized by universally generous welfare policies.

However, the use of these broad typologies can obfuscate which specific institutional arrangements are moderating the relationship between life course circumstances—like unemployment spells—and health. The UK, for instance, is typically classified as a liberal welfare state following Esping-Andersen’s classification. While this holds in many respects, does it apply to the UK’s health system? The NHS is arguably a stark contrast to the health care

system one would expect in a liberal welfare state. Furthermore, from Esping-Andersen's typology perspective, the UK and the US should have similar health care arrangements. However, in reality, their health care provision and financing are diametrically opposed (Banks et al. 2006). These broad categories fail to unpack these differences. As such, it becomes imperative to examine specific policy areas or their interactions to fully understand the welfare state's impact on people's health.

Several researchers, without directly seeking to solve the concerns regarding ideal types, have considered the impact of welfare states on population health distribution. For instance, Conley and Springer (2001) provided a kind of intermediary solution to the conflict between overarching typologies and finely-detailed indicators. They found a strong positive correlation between public health spending and a decrease in infant mortality rates at a national scale, a relationship that persisted even when adjusting for economic development level and prior public health spending. Intriguingly, this association varied across different welfare state regimes, suggesting that the effect public health spending may have on population health could be contingent on the welfare state's structure. They demonstrated a significant beneficial effect of public health spending only among corporatist regimes, though they suggested the non-significant effects among other regimes might be due to sample size constraints.

Discarding welfare typologies altogether, Morris, Beckfield, and Bambra (2019) pursued an understanding of how social investment policies—a more recent shift in European welfare state strategies aiming to strengthen labor markets—affect cardiovascular disease in a gender-specific manner. They focused on indicators in three policy areas: parental leave, early childhood education and childcare, and active labor market policies. Their findings suggested that government expenditure on early childhood education and childcare equally benefitted both genders, while increased public spending on paid parental leave particularly advantaged women.

Such research designs, which examine specific welfare state features, can provide more



detailed insights into which particular welfare state characteristics directly or indirectly impact health disparities. However, an often overlooked aspect is the dynamic nature of welfare states, which evolve over time (Abbott and DeViney 1992). The interaction between individuals' life trajectories and the welfare state, and their subsequent effects on health, cannot be fully understood by examining the welfare state at a single point in time. It's essential to comprehend the specific political environments that people have previously lived in, rather than focusing solely on their current policy contexts.

An exemplar of this approach is the study by Beckfield and Bambra (2016), which analyzed life expectancy trends as a result of long-term shifts in three social policy areas between 1971 and 2010: unemployment insurance, sickness benefits, and pensions. They found that differences in pension schemes could partially explain the US mortality disadvantage relative to European countries. This longitudinal examination provides insights into the cumulative and dynamic effects of policy changes on population health. However, it does not demonstrate how these changes might affect an individual's health status due to the accumulation of exposures at the personal level.

## The role of other political institutions and globalization

A second branch of political sociology, often spotlighted in population health research and termed the 'political institutions literature,' delves into factors such as democracy and political incorporation. It studies their influence on the distribution of population health. This literature emphasizes dimensions like the level of democratization, the political inclusion of marginalized groups, and the ideology of the ruling party. For instance, various scholars argue that, in contrast to autocratic regimes, democratic ones tend to allocate more resources towards pressing concerns vital for the well-being of their populace, thereby enhancing health outcomes (Besley and Kudamatsu 2006; Franco, Álvarez-Dardet, and Ruiz 2004; Gerring, Thacker, and Alfaro 2012).

Expanding on this, Wigley and Akkoyunlu-Wigley (2011) suggest that both the level

of democratization and the kind of electoral system a democratic nation has are significant. Drawing from Persson and Tabellini's theory on the repercussions of electoral systems (2003), they posit that proportional electoral systems generally lead to healthier populations in comparison to majoritarian ones. This is attributed to the former's inclination to allocate resources more universally, consequently boosting the overall health of the citizenry. Employing a continuous indicator of electoral system proportionality from 1970 to 2004 across 17 countries, their analysis revealed a strong correlation between enhanced electoral proportionality and better overall health outcomes, especially among the socio-economically disadvantaged.

In democratic contexts, certain academics posit that the impact of democracy on public health oscillates based on the reigning political party. The 'power constellations' theory underscores the idea that political parties, through their redistributive strategies, profoundly affect how resources are dispersed within a state (Beckfield and Krieger 2009). This, in turn, shapes both the magnitude and nature of national inequalities, which indirectly molds the health distribution across the populace. Rodriguez et al. (2014) observed that the U.S. experiences lower infant mortality rates during Democratic presidential tenures compared to Republican ones. While they initially hypothesized a more pronounced effect among Black Americans, the data indicated an equivalent relative impact on both Black and White populations. However, given the intrinsically higher infant mortality among Blacks, the absolute difference remains more pronounced. Potential underpinnings for this phenomenon might encompass factors like self-selection—with riskier births being more prevalent during Republican administrations owing to fewer terminated pregnancies—or the enhancement of maternal health under Democratic regimes via strategic social policies, subsequently diminishing infant mortality.

Pertaining to the political inclusion of marginalized groups, studies corroborate that the health of these groups improves significantly when they are politically represented, leading to diminished health disparities. Krieger et al. underscored the substantial decrease in infant

death rate disparities (2013) and premature mortality (2014) following the annulment of Jim Crow laws in the U.S. This propels the discourse around race from being just an individual health determinant to the more expansive idea that systemic racial dynamics directly impact health outcomes. Similarly, Bakhtiari, Olafsdottir, and Beckfield (2018) found that health disparities between ethnic minorities and their counterparts in Europe substantially wane in unequivocally non-discriminatory environments. Such environments are gauged using an anti-discrimination score that reflects the integration of immigrants and ethnic minorities across 22 countries. In a parallel vein, Miller (2008) compellingly argued that child survival rates in the U.S. markedly improved following women's suffrage. The resultant uptick in public health spending gave rise to hygiene campaigns, which successfully reduced child mortality rates by 8-15%.

A burgeoning area of research in sociology delves into the influence of globalization on the distribution of population health. Despite its significance, this domain remains relatively underdeveloped in studies examining the interplay between globalization and health disparities, often resulting in disparate conclusions. Scholars in this arena contend that globalization molds disparities in access to social determinants of health via both direct mechanisms (e.g., cross-border disease transmission) and indirect pathways (e.g., augmentations in public health expenditure) (Elmawazini et al. 2019). Blossfeld, Buchholz, and Hofäcker (2009) postulate that globalization not only shapes individual life paths but also determines susceptibility to labor market oscillations, thereby influencing potential health outcomes. They underscore the pivotal role of welfare states in mitigating the adverse ramifications of globalization on certain demographics. Notwithstanding its potential, this research domain grapples with formidable challenges, chiefly concerning measurement. The question arises: How might we aptly quantify globalization in a manner that elucidates its effect on health disparities? This methodological quandary has arguably stymied the expansion of pertinent studies. Addressing this impediment is paramount if we aspire to delve deeper into these interrelationships (Labonté and Schrecker 2007).

What is intriguing about these perspectives that address the role of political institutions and globalization is that many of these institutions, much like welfare states, are often perceived as static and immutable entities. Consider, for instance, the notion that democracy is beneficial for people's health. How might someone's health fare in the throes of rapid democratization? Or in an even more fluid context where, in a span of less than 30 years, there's a shift from democracy to autocracy and then back to democracy? How does living through these transitions influence an individual's health? Moreover, at what stage of their life are they when these changes unfold, and how does that timing impact their health? It is these questions that drive my contention: we need to integrate the life course perspective into the institutional research on health disparities. However, before advancing this argument, I will first address some methodological concerns pertaining to the study of politics and health. These considerations will be crucial in shaping my proposed Institutional Life Course Framework.

## Methodological issues for understanding the political nature of health

Conducting comparative population health research presents several methodological challenges. To date, scholars incorporating political sociology into population health studies have predominantly employed two research design strategies: small-n and large-n approaches. This debate is not novel in comparative research, especially in political sociology, and this emerging field is no different.

On the small-n front, studies by Olafsdottir (2007) and Banks et al. (2006) present exemplary strategic research designs that facilitate comparison between political contexts and health. Olafsdottir assessed health outcomes across distinct social groups in the US and Iceland to determine if social determinants of health differed between countries. The study surmised that the welfare state could potentially mitigate adverse health effects for specific social demographics. Similarly, Banks and his team contrasted the US with the UK, finding that irrespective of socioeconomic standing, Americans are generally less healthy than their

UK counterparts.

The small-n approach brings forth several advantages. It is particularly adept at providing deep contextual understanding, facilitating nuanced interpretations of social phenomena and offering richer qualitative data. This method allows researchers to meticulously select cases based on theoretical importance, thus enabling them to make significant contributions to existing theory. While it may not provide the breadth that some larger studies do, its depth is invaluable, especially for conceptualizing and refining hypotheses, as well as for thoroughly examining specific instances to shed light on larger theoretical issues.

In comparison, the large-n method utilizes extensive data sets from either individual or aggregate levels. This approach excels in providing a broader view by comparing a vast number of units with quantifiable attributes. The large-n approach's strength lies in its ability to employ standardized indicators across nations, offering a macro perspective that can lead to more generalizable conclusions. Studies like Beckfield and Bambra's research on US mortality disparity compared to Europe (2016), and Conley and Springer's examination of the welfare state's ascendancy and the descent in infant mortality rates (2001) exemplify this design.

The primary challenge of this aggregate-level design is that, even when the observation count is augmented through a longitudinal lens, deploying country-level fixed effects practically nullifies inter-country diversity in regression models, thus curtailing the statistical power of any assertions. Nonetheless, this design's strength is its enablement of the use of standardized indicators across nations, often measured uniformly by entities such as the World Bank, the United Nations, or academic institutions.

Some studies have embraced a comparative multi-level *modus operandi*, employing microdata across diverse environments. While certain research in this vein investigates how contextual attributes impact individual health outcomes, others delve into the moderation of individual-level health determinants by context. A study exemplifying the latter, which explores the moderating influence of institutional environments, pertains to unemployment

and health across European welfare states (Bambra and Eikemo 2008). Concerning the direct ramifications of context on health, scholars have probed how context-driven disparities, like income distribution, correlate with individual health variations, irrespective of personal income or educational attainment (Beckfield 2004; Jen, Jones, and Johnston 2009). The strength of this large-n multi-level approach is its capacity to model contextual features postulated to influence individual health and its distribution. Yet, accessing individual-level data is often constrained and usually necessitates rigorous harmonization initiatives. Presently, multiple sources of analogous data exist, mainly in the US and Europe. However, sometimes these datasets lack precise health status metrics beyond self-reported health. Surveys, such as the Health and Retirement Study and its international counterparts, as well as projects like the Gateway to Global Aging Data (Lee et al. 2021) which has integrated many of these sources, offer promising prospects for such research endeavors.

### 1.1.3 Bringing the life course into the institutional picture

Shifting our focus from methodological considerations, I now delve into a new approach that can enhance our understanding of population health disparities. By integrating a life course perspective within the realm of political sociology, I aim to uncover how historical and personal contexts intertwine to shape individuals' health trajectories. This perspective not only offers a more comprehensive understanding of contemporary health inequalities but also opens doors to innovative research directions in this domain. Building upon existing the discussed research that unifies political sociology and social epidemiology to explicate health disparities through institutions, I now take a step further by advocating for the explicit inclusion of a life course perspective in the examination of population health. Despite the established link between political sociology and social epidemiology through an institutional lens, there has been no comprehensive or explicit inclusion of a life course perspective in the examination of population health from this approach.

By exploring the sociological interpretation of life course research, its application in

studying health inequality, and the principal models used to establish the relationship between life courses and health, we can gain a deeper understanding of how historical and personal contexts intertwine to shape individuals' health trajectories. These models, including the critical periods, social mobility, and risk accumulation frameworks, offer valuable insights into the complex dynamics that underlie health disparities over time. Through an integrated approach that considers both personal and historical time, we can comprehend how exposure to political-institutional determinants throughout the life course influences health outcomes, paving the way for a more comprehensive understanding of contemporary health disparities and the potential for novel research directions in this domain.

Twentieth-century events like the Great Depression and World War II significantly shaped people's lives, leading social scientists to consider the pervasive influence of ever-evolving historical and personal contexts on individuals' lives. Hence, the life course approach evolved as an all-encompassing theoretical orientation to human lives, conceptualizing them as social pathways with developmental effects occurring in personal and socio-historical contexts. Three primary concepts chart the evolution of life course theory: (1) social pathways, (2) trajectories, and (3) turning points. Social pathways are the socially structured life trajectories people follow, which are influenced by institutions and societal norms, but ultimately by individual choices. The quintessential sociological structure-agency tension is helpful in understanding these life pathways. Trajectories refer to the sequence of roles that people experience, shifting from one state to another, staying in each state for a specific duration. Social pathways are navigated through these individual-specific trajectories. Lastly, turning points signify significant objective or subjective changes in people's lives, which can redirect their life course. These changes are often unanticipated, such as a major job transition, and can differ from expected changes aligned with social pathways (Elder, Johnson, and Crosnoe 2003).

Sociological research employs a life course approach to comprehend life trajectory changes, people's transitions from one state to another, and how institutional and cultural

shifts influence these trajectories. Some studies, such as those by Fabbre (2016), Van Winkle (2018), Van Winkle and Fasang (2017), Blossfeld, Buchholz, and Hofäcker (2009), employ qualitative, quantitative, and comparative methods to explore a myriad of factors. Other studies like those by South and Spitze (1986), Willson (2007), Pollock (2007), and Halpern-Manners et al. (2015), seek to explain the effects of transitions or life trajectories on different aspects of social life. Notably, there’s a significant body of literature investigating the effects of life transitions and trajectories on health.

The application of a life course perspective in health research is not novel. The existing literature offers three primary theoretical models to explain the impact of social life course experiences on subsequent health statuses: the critical periods model, the social mobility model, and the risk accumulation model. Most of these models emphasize the socioeconomic status experienced throughout the life course, but their findings can be extrapolated to other types of advantages and disadvantages. Moreover, these models are not exhaustive or mutually exclusive (Corna 2013).

The critical periods model posits that exposure to unfavorable circumstances and experiences during gestation, birth, or early childhood can significantly affect an individual’s later-life health (Kuh et al. 2003; Demakakos, Chrousos, and Biddulph 2018; van der Linden et al. 2018). This model, also known as the fetal origins hypothesis in economics literature, has garnered recent attention due to the availability of population-level biological data. It has been used to argue that health disparities arise from changes in gene regulation influenced by social, physical, and institutional environments experienced throughout an individual’s life, with exposure during early childhood being particularly significant (Almond and Currie 2011; Landecker and Panofsky 2013).

Research has demonstrated that self-reported poor health status during childhood is significantly associated with poorer subjective health in adulthood, even when controlling for education and employment trajectories experienced during midlife (Arpino, Gumà, and Julià 2018). Similarly, Chen et al. (2018) assert that epigenetic programming associated with



childhood socioeconomic status exposure explains the higher prevalence of cancer among individuals who had an adverse childhood. This underlines that gestation, infancy, and early childhood are critical periods in the life course, and recognizing the extent of exposure to adverse conditions during these periods is crucial in understanding health inequalities in adulthood or old age (Ferraro, Shippee, and Schafer 2009).

The Social Mobility model proposes that the impact of early life socioeconomic conditions, whether positive or negative, on the health of older individuals can be offset by enhanced or deteriorated economic conditions during early-, mid-, or late-adulthood (Ferraro, Shippee, and Schafer 2009). This model posits that early childhood socioeconomic status does play a part in health vulnerabilities later in life, yet these effects can be moderated by mid-life economic circumstances (Brennan and Spencer 2014; Bartley and Plewis 2007). These models, however, are not necessarily in competition, as their applicability depends on the specific aspects of individuals' lives being observed. For instance, Arpino et al. (2018) demonstrate that despite childhood health significantly influencing adult health status—thus supporting the Critical Periods model—their research also reveals that the adverse impact of low childhood socioeconomic status on adult health can be mitigated by educational attainment and positive family and employment trajectories. Similarly, Graves and Nowakowski (2017) illustrate that childhood socioeconomic status correlates significantly with allostatic load in adulthood, with this relationship being moderated by educational attainment later in life. Nevertheless, it remains less clear what factors enable those who experienced disadvantageous childhoods to alleviate these adverse effects. As I will later argue, a life course institutional approach may offer insights to this question.

Contrary to the Critical Periods and Social Mobility models, the Risk Accumulation model does not specifically focus on the periods of exposure to advantageous or detrimental experiences. Rather, it suggests that consistent exposure to multiple life circumstances, accumulated as advantages or disadvantages over time in domains such as education, employment, or significant life events, determines an individual's subsequent health outcomes

(Cunningham et al. 2018; Dannefer 2003; Singh et al. 2017). For instance, Aitken et al. (2016) found that becoming a mother as a teenager adversely impacts women’s mental health later in life, but this relationship’s magnitude varies across birth cohorts due to historical contexts. In another study with extensive longitudinal data, Carroll et al. (2017) focused on the long-term impacts of the level of coursework students experienced during high school, net of their previous performance, health, and socioeconomic conditions. They concluded that students who took advanced coursework during secondary education report better health in midlife, an association largely explained by pathways into postsecondary education and later occupational characteristics. Importantly, it should be noted that the accumulation of risks can also operate in a stratified manner. For example, Liu and Umberson (2015) found that stress trajectories from childhood to midlife only increase the likelihood of being overweight or obese for women, emphasizing the importance of considering sex-specific environments in understanding health at different life stages.

Despite several studies describing the effects of these theoretical models on health status, most do not consider how people’s structural contexts might moderate the effects of (dis)advantages throughout the life course (Angelini, Howdon, and Mierau 2019; Cheval et al. 2018; Surachman et al. 2019). Furthermore, most studies focus on only one of these theoretical models (Frenz et al. 2014; Reiss 2013). Indeed, only three studies, to my knowledge, have simultaneously tested these models on health outcomes (Pudrovska and Anikputa 2014; Shuey and Willson 2014; Willson and Shuey 2016). Therefore, it remains largely unknown whether these theoretical models that describe social (dis)advantages—the Critical Periods, the Social Mobility, and the Risk Accumulation models—affect overall health independently. Understanding the role of each model may be crucial for appreciating the significance of multiple life course exposures in overall health among elderly women. However, my primary interest lies in incorporating a comparative perspective that considers how policy or institutional contexts might moderate these effects.

### 1.1.4 The Institutional Life Course Framework for the Study of Health Inequalities

As discussed earlier, a growing body of research has explored the impact of institutional arrangements on population health and health distribution. However, the explicit application of a life course perspective to analyze these associations is still lacking. I argue that a genuine integration of the life course perspective in this research necessitates understanding political institutions, such as welfare states, as dynamic entities subject to political and cultural shifts over time, rather than as static ones (Abbott and DeViney 1992). Therefore, examining political institutions at a single point in time is insufficient if we are to comprehend the interaction between individuals' life courses and the welfare state, along with their effects on health later in life. To truly embrace the life course perspective in understanding how life circumstances become embodied and influence people's health status, we must consider the specific political environment in which people lived in the past, not just the current policy context. This commitment must recognize that time operates both at a sociohistorical and personal level (Elder, Johnson, and Crosnoe 2003). To understand the effects institutions have on people's health, we must grasp their exposure to these institutions throughout their life course, placing them in historical context and aligning them with people's life stages.

By combining a life course and institutional approach to health inequalities, Bambra, Netuveli, and Eikemo (2010) examined educational inequalities in self-reported health and long-standing illness across six age groups in 17 European countries, categorized into four welfare state types: Anglo-Saxon, Bismarckian, Scandinavian, and Southern. Their findings revealed surprising increases in health inequalities with age. Furthermore, the Scandinavian regime and older Scandinavian cohorts did not exhibit the smallest health inequalities, while the Bismarckian and Southern regimes displayed the least educational health inequalities. However, this research design, which analyzes age groups separately, acknowledges that each age group represents a different stage in the welfare state life course, but the categorization remains broad and inflexible, lacking historical distinctions in different policy areas.

For example, although the British National Health Service, established in 1948, remained largely unchanged by Thatcher’s neoliberal agenda, other policy areas underwent significant modifications, relegating social security to a last resort for the poor (Pierson 1994). Correspondingly, Sieber et al. (2019) found that the moderating effect of adult socioeconomic status on the link between low socioeconomic status during childhood and later-life health depends on the welfare regime individuals reside in. Here again, welfare regimes are treated as static, broad entities, hindering our ability to identify which specific institutional arrangements moderate the relationship between life course circumstances and health at different points in time. This, in turn, limits our understanding of the distinct stages in the welfare state life course that may have involved the adoption of specific policies in particular areas for some states, while others focused on developing other policy areas.

Several scholars have indirectly explored health disparities through the lens of institutional and life course frameworks, avoiding broad welfare state typologies. For instance, Avendano et al. (2015) used SHARELIFE data, a retrospective survey facilitating the reconstruction of life trajectories across multiple European countries. They focused on the impact of maternity leave policies when women had their first child between 16 and 25 years of age and the subsequent effect on mental health in later life. They compared employed women around the time of their first childbirth to those who were not employed, effectively contrasting those eligible and ineligible for maternity leave. The results indicated that women with access to more generous maternity leave policies reported better mental health in old age compared to their ineligible counterparts. Avendano and his team recognized that institutional contexts, such as maternity leave policies, are dynamic, not static. Therefore, individual-level analysis is more suitable as individuals are variably exposed to institutional contexts based on factors like birth cohort, age, and maternity status.

In my perspective, this approach’s strength lies in its broad applicability. It is relevant not only for comparative research involving distinct polities like countries or independent administrative units but also for longitudinal studies within a single administrative unit

experiencing significant temporal changes. It is applicable both to a small- and large-n approach. While this perspective is not entirely novel and is technically akin to a cohort analysis, its distinctive framing through an institutional and life course lens allows for deeper engagement with broader sociology subfields. For example, Chen, Yang, and Liu (2010) used the rapidly changing Chinese context to explore how institutional context moderates the relationship between socioeconomic status (SES) and health throughout the life course. They astutely used birth cohorts as a proxy for historical periods individuals were exposed to (p. 127). Their findings suggest that while SES gaps tend to widen with age—a seemingly universal trend—the impact of education decreases among subsequent cohorts. Concurrently, the income-health trajectory gap diverges for earlier cohorts but converges for the most recent ones. Similar to the earlier large-n/small-n debate, this research design does not model institutional changes like Avendano’s paper does, but it uses them theoretically to generate hypotheses about the mechanisms driving the shifting individual-level associations.

I propose that the synthesis between political sociology and population health could significantly benefit from adopting a life course perspective. This perspective involves comprehensively examining individuals within their historical-institutional context, considering both personal and historical time. By doing so, we can decipher how exposure to these structures might impact later-life health and understand the historical and situational variations in health disparities.

This approach aligns with the assertion made by Link and Phelan, emphasizing that addressing health disparities requires directly confronting their underlying causes. This view encourages exploration into how various hierarchical structures may produce differing levels of inequality. Simultaneously, the importance of recognizing the temporal dynamics within these stratification systems becomes evident.

Focusing on a life course perspective allows us to see how individuals’ health conditions are shaped by the systems they have encountered throughout their lives. It is essential to analyze these systems within both their historical context and in terms of how they evolve

over a person’s lifespan. By connecting these various elements, we create a unified framework that not only spans the entire human lifespan but also offers insights into the multifaceted nature of health inequalities.

A major challenge to this approach is data availability, necessitating longitudinal data that can illuminate people’s life trajectories. Nonetheless, life-history calendars and other data collection techniques have proven reliable in capturing individuals’ past circumstances (Morselli et al. 2016). Comparative and/or longitudinal studies can leverage the proposed approach to view contemporary health disparities as outcomes of past institutional exposure, even with cross-sectional data. Moreover, this approach can enrich subfields like immigration and health. Building on Maskileyson’s (2019) work—which explains immigrants’ health partially based on their exposure to inequality in their origin countries—considering exposure to institutional arrangements in immigrants’ countries of origin could offer insightful data on health (dis)advantages related to migration.

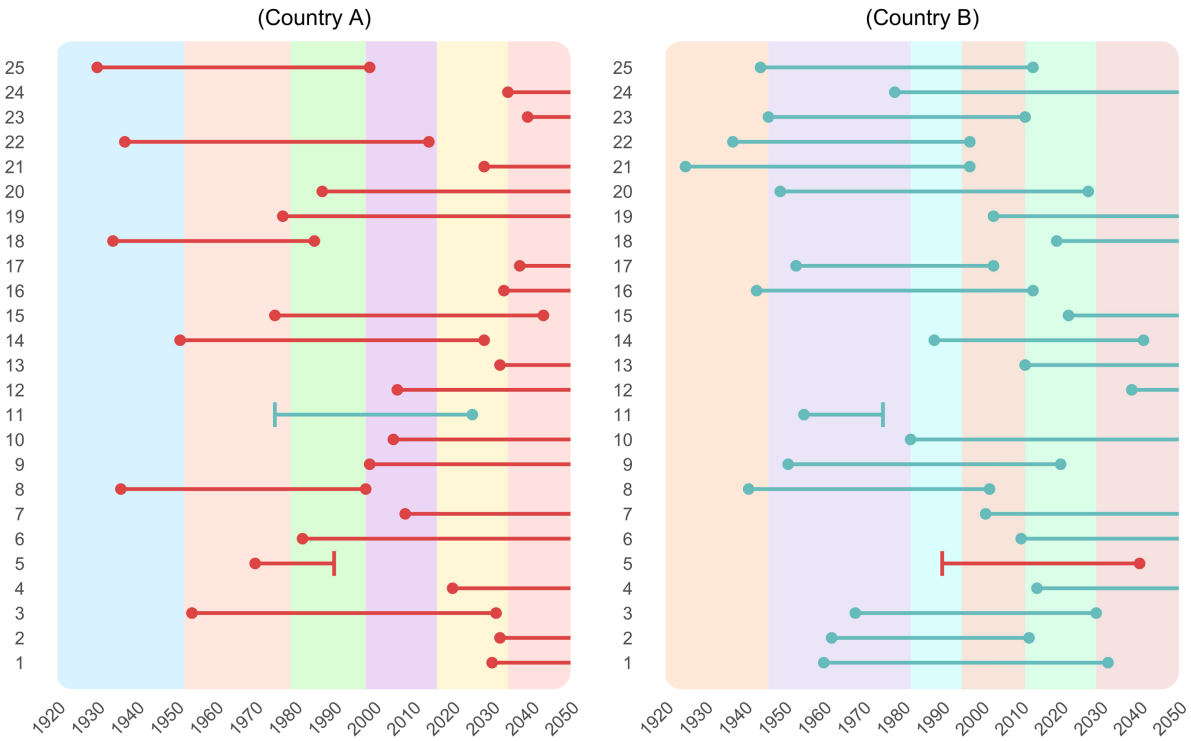
My train of thought concerning the intricate interplay among institutions, life courses, and health disparities can be elucidated through a conceptual diagram, thoughtfully encapsulated in Figure 1.1. This graphical representation is not merely an artistic rendering; it serves to clarify and refine my line of inquiry, acting as a visual guide to the underlying theoretical framework.

Allow me to walk you through the elements presented in the diagram. First, observe the left box in Figure 1.1a. The large box signifies a country, state, or any political entity. Each line within the box symbolizes an individual’s life trajectory, characterized by various measurable dimensions. These dimensions may include employment status, marital status, fertility history, health status, or other quantifiable aspects that delineate the continuous journey of people’s life courses.

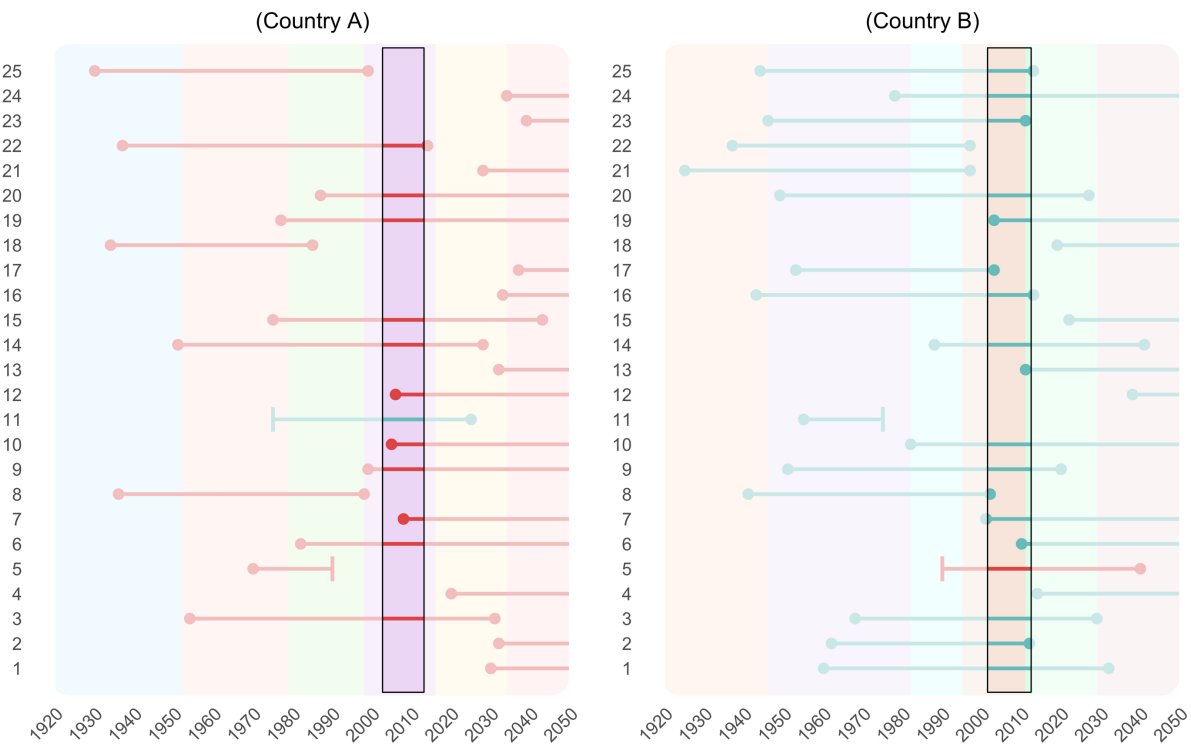
The background color in the diagram signifies more than mere aesthetics; it denotes a specific institutional arrangement that guides and influences these life trajectories. In the hypothetical scenario depicted here, we begin with three individuals born around 1930, followed

Figure 1.1: Institutions, Life Course, and Health: A Graphical Representation

(a) Life Course Institutional Model



(b) Traditional Model



by another three individuals born between 1940 and 1950. These individuals, collectively representing a population, traverse a complex array of institutional changes throughout their lifespans, each change affecting their outcomes in multifaceted ways.

Shifting your attention to the right box in Figure 1.1a, you will notice an illustration of a different context. Here, individuals are immersed in a distinct institutional framework. This framework is not static; it's dynamic, undergoing transformations at distinct points in time, mirroring the evolving social and political landscapes.

I argue that many studies adopting a transnational approach to decipher health disparities often adhere to a research design akin to the one depicted in Figure 1.1b. In such models, different individuals are observed at various life stages in a cross-sectional manner. These studies grapple with the intricate relationship between individual-level characteristics and health, attempting to illustrate how the institutional backdrop (symbolized by the background color) either moderates this relationship or directly impacts individuals' health status.

In a quest to advance our understanding, I propose that health disparities should not be seen merely as outcomes of singular exposures. Rather, they must be viewed as dynamic processes shaped by institutional exposures across different life stages. To grasp health disparities at any given point in time, it's crucial to consider the fluid and ever-evolving institutions that operate in the background as individuals navigate their life journeys.

This complexity deepens when we consider the growing percentage of the population experiencing institutional changes not only in their current location but also as they transition from one setting to another. This mobility exposes them to an array of background institutional arrangements, adding layers to their life experiences. In Figure 1.1a, for instance, in Country A, observation 5 represents an individual born around 1970 who migrates to Country B around 1990 and passes away around 2040. Similarly, individual 11 in Country B is born around 1955, migrates to Country B in 1980, and passes away in 2030. The institutional exposures of these individuals are considerably more intricate and multifaceted,



demanding that research rise to the challenge of accounting for these complexities.

In this context, this dissertation aims not only to illuminate the multifaceted nature of institutional exposures and their effects on health disparities but also to strive for a comprehensive, nuanced understanding of the intricacies involved. By employing both traditional models and innovative approaches, I hope to contribute a fresh perspective to the existing body of knowledge, unveiling new insights, and offering practical implications for policy and practice.

## 1.2 Structure of the Dissertation

The three ensuing chapters in this dissertation exemplify applications of the theoretical framework I have introduced. While these standalone chapters illustrate specific instances, they by no means encompass all the potential applications that I believe this framework can offer.

In Chapter 2, I delve into health disparities among Latin American immigrants in the United States, with a focus on pre-migration exposures and the influence of the country of origin. Previous research has explored post-migration experiences and the ‘Immigrant Paradox,’ but limited attention has been given to the impact of pre-migration experiences on immigrants’ health. By adopting a life course institutional approach, I investigate how specific institutional features in the country of origin, such as welfare generosity and democratic expansion, correlate with immigrants’ post-migration health status.

Using a novel merge between individual-level cross-sectional data and country-level longitudinal data, Chapter 2 uncovers that exposure to higher levels of welfare generosity and democratic contexts during childhood, prior to migration, correlates with improved health status in adulthood. These findings underscore the significance of considering pre-migration exposures in comprehending health disparities among Latin American immigrants. The study underscores the need to analyze the interplay between country-of-origin attributes and exposure in the destination country to holistically address health disparities in immigrant

populations.

In Chapter 3, I explore the connection between life course trajectories in work and family dimensions and women's mental health later in life, highlighting the moderating role of gendered welfare state policies. Drawing from the cumulative advantage model and role enhancement/conflict theory, I utilize SHARELIFE data from 14 European countries to discern the impact of intricate and unpredictable life courses on mental health among women aged 50 and above.

The results of Chapter 3 demonstrate that life course differentiation in both work and family domains can have adverse effects on mental health in later life, particularly for women employed throughout their life courses. Interestingly, the negative effects of work and family complexity are additive rather than multiplicative, suggesting that specific statuses experienced carry more weight than the number of transitions. Furthermore, the study highlights the significance of defamilialization policies, which separate welfare provision from family relationships, in moderating the effects of work complexity on mental health. The findings underscore the necessity of considering welfare state configurations and retrenchment policies in comprehending the mental health implications of varied life courses.

In Chapter 4, I probe the retirement patterns of Latin American immigrants in the United States and their health consequences from ages 60 to 70. Utilizing data from the Health and Retirement Study (HRS) and employing sequence analysis, the study identifies seven retirement patterns and their associated health outcomes. Additionally, the research underscores the role of intersectionality—taking into account race, ethnicity, immigration status, and gender—in shaping retirement decisions and subsequent health experiences. This study accentuates the demand for targeted interventions and inclusive policies to promote health equity and social justice in later life, guaranteeing a more positive aging experience for all.

Finally, in the conclusion of this dissertation, Chapter 5, I discuss the primary implications of the findings for the theoretical agenda this project endeavors to advance. It

also outlines a research agenda focused on different populations where health disparities and other outcomes can be studied using the Institutional Life Course Framework. In doing so, the conclusion delves into the methodological challenges posed by implementing a research agenda following this conceptual model.

In closing, this introduction has laid the foundation for the exploration of health inequalities through the lens of the Institutional Life Course Framework. As we embark on this journey through the subsequent chapters, it is important to recognize that the presented framework's potential reaches far beyond the scope of this dissertation alone. The chapters presented here are not exhaustive in demonstrating the applications of this conceptual framework. While the upcoming chapters delve into specific contexts such as Latin American immigrants and women's life courses, the framework holds the promise of addressing health disparities among various populations unexplored in this work.

As previously discussed, the LGBT population stands as one such example. The temporal and spatial variation in policies affecting this community across different territories highlights the potential for this framework to shed light on their health inequalities. By tracing the experiences of LGBT individuals within varying institutional contexts, the Institutional Life Course Framework can provide a deeper understanding of how policy shifts interact with individual life courses to shape health outcomes. The exploration of such diverse contexts speaks to the breadth and versatility of this framework.

The subsequent chapters are but the beginning of our endeavor to unravel the intricate interplay between institutions, life courses, and health disparities. Through the lens of the Institutional Life Course Framework, I aim to not only understand the complexities of health inequalities but also pave the way for meaningful interventions and informed policy decisions. As we navigate through the empirical investigations ahead, this introductory chapter serves as a guiding light, illuminating the path towards a more comprehensive understanding of health disparities within the broader societal context.

## CHAPTER 2

# PRE-MIGRATION EXPOSURES AND HEALTH AMONG LATIN AMERICANS LIVING IN THE US: HOW DOES THE COUNTRY-OF-ORIGIN MATTER?

Latin Americans and their descendants, comprising nearly 19% of the U.S. population, have emerged as the most populous ethnic minority group in the United States, according to the 2022 US Census Bureau. This demographic prominence, particularly notable in states like California and New Mexico, has sparked a significant body of research on the health of both native and foreign-born Hispanic Americans.<sup>1</sup> This research has been motivated by its growing policy implications. Sociologists, epidemiologists, and public health scholars have thoroughly investigated the correlation between immigration and health in both the U.S. and Europe. Numerous studies suggest that immigrants, upon arrival, are healthier than non-immigrant residents in their destination countries, a phenomenon often referred to as the ‘Immigrant Paradox’ or the ‘Hispanic Paradox’ when referring particularly to Latin Americans. However, the health of Latin American immigrants deteriorates over time, with second-generation Hispanic Americans reportedly having worse health than their immigrant counterparts. In this context, I identify two substantial gaps in the existing research.

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1. Before delving into the rest of this chapter, I want to make a quick clarification regarding the use of the terms Hispanic, Latino, Latina, Latinx, and Latine. Hispanic refers to individuals who are native speakers of Spanish or have origins in Spanish-speaking countries. It encompasses people from Spain, as well as Latin America. It is a linguistic term, focused on the shared language across these regions. Latino has historically been used to describe people who come from or have ancestry in Latin America, including Brazil, which is a Portuguese-speaking country. This term is specific to geography and does not include people from Spain. Latina is the female-gendered version of Latino. It refers specifically to women who come from or have ancestry in Latin America. As the reader may know, Latinx has been incorporated more recently as a gender-neutral term to be inclusive of all gender identities. It is used to describe people who come from or have ancestry in Latin America, without specifying their gender. However, this term is seldom used by people in the Latin American community in the U.S. Given its impronunciation in Spanish, I personally prefer the term Latine as a gender-neutral term. It is more prevalent in Spanish-speaking communities, as it adheres more closely to the grammatical structure of the Spanish language. It also aligns with the current linguistic movement aiming to replace ‘a’ or ‘o’ with ‘e’ in all gender-specific words that refer to people in general. That said, because the reader is probably more familiar with the terms Latinx and Hispanic, and because these are the terms that have been mostly used in the literature, I will refer to them as interchangeable. But please keep in mind that they are not the same, and that the word Latine exists and is being used by many of us, native Spanish speakers in our countries.

Primarily, a significant proportion of these studies focus on post-migration experiences to evaluate immigrants' health. The baseline health status of immigrants is established, followed by an analysis of how this status deviates from other groups, such as White Americans or Hispanic Americans due to migration selection processes (Elo, Mehta, and Huang 2008; Feliciano 2005; Jasso and Massey 2004; Marmot, Adelstein, and Bulusu 1984; Palloni and Arias 2004; Sharma, Michalowski, and Verma 1990), or how and why it changes over time given the protective cultural practices of Latin American immigrants (Amaro et al. 1990; Angel, Buckley, and Sakamoto 2001; Blue and Fenelon 2011; Cho et al. 2004; Hummer et al. 2007).

Concentrating predominantly on post-migration, these studies neglect the influence of pre-migration experiences on immigrants' health. Limited research exists that clarifies how the country of origin impacts the health status of Latin American immigrants due to data constraints (Palloni and Arias 2004). When the country of origin is considered, it's typically viewed as a homogeneous entity. All immigrants from a country, regardless of their birth or migration year, are treated as uniformly exposed to the same entity: the country. To my knowledge, only one study has concurrently examined health status differences by country of origin and arrival-cohort (Hamilton, Palermo, and Green 2015), advocating for the consideration of arrival cohorts when estimating the health decline of Latin American immigrants in the U.S. They confirmed that the length of stay is a vital determinant of health status, but it's overestimated when arrival cohorts are excluded. However, they failed to adequately explore the significance of arrival cohorts and the country of origin.

This study endeavors to bridge a critical gap in understanding health disparities among immigrants by employing an Institutional Life Course approach. While much recent sociological research has shed light on how the characteristics of the arrival country or state can impact the health of immigrants, there remains limited insight into the influence of institutional structures from their countries of origin. In particular, this study examines the correlation between pre-migration exposure to specific institutional features in the countries

of origin among Latin American immigrants and their post-migration health status in the United States. Two key institutional features are highlighted: welfare generosity, captured through metrics like public health and education expenditure, and democratic expansion, gauged by the nature of the political regimes immigrants were exposed to pre-migration. By weaving together institutional theories from the Global South with immigrant adaptation literature from the U.S., this research offers a unique lens. The objective is not just to analyze immigrant health in the U.S., but to deepen our understanding of health disparities by recognizing how dynamic institutions from immigrants' formative years persistently influence their health adaptation in their new homeland.

## 2.1 Background

### 2.1.1 Immigrants' Health

Numerous studies have documented the 'healthy immigrant effect', illustrating that immigrants tend to be healthier compared to their non-migrant counterparts. This effect has been observed across various destination countries, including European nations, the U.S., Canada, Australia, and the U.K. The literature posits that health-related selection effects within the immigrant population are prevalent (Boulogne et al. 2012; Guendelman et al. 1999; Kennedy et al. 2015; Malmusi, Borrell, and Benach 2010). One overarching argument is that the process of migrating is stressful and physically demanding. Therefore, those with compromised health are less likely to embark on such a venture (Jasso and Massey 2004; Kennedy et al. 2015). Moreover, migrants typically possess socioeconomic attributes that correlate with better health when compared to those who do not migrate (Riosmena, Kuhn, and Jochem 2017).

Another intriguing observation from research is the 'immigrant health paradox.' Despite often having lower education, lower income, and belonging to marginalized ethnic minority groups, immigrants frequently exhibit better health than citizens of their host country

(Dubowitz, Bates, and Acevedo-Garcia 2010; Ruiz, Steffen, and Smith 2013). This paradox persists across diverse health indicators (Jasso and Massey 2004; Landale, Oropesa, and Gorman 2000; Palloni and Arias 2004; Singh and Miller 2004; Teitler, Martinson, and Reichman 2017). The ‘Hispanic paradox’ in particular, has been largely interpreted through the lens of acculturation, suggesting that prolonged U.S. residence prompts Latin Americans to adopt the health behaviors of U.S. natives, such as smoking (Abraído-Lanza, Chao, and Flórez 2005). However, other research indicates that extended U.S. residency can correlate with improved health outcomes for immigrants. Factors like access to superior healthcare, upward social mobility, and the adoption of healthier habits like regular exercise are believed to be contributory (Antecol and Bedard 2006).

I posit that existing research places undue emphasis on the individual, framing health, as Castañeda et. al. articulate, from a behavioral or cultural standpoint, wherein health outcomes emanate from personal choices (2015). With the predominant reliance on acculturation as an explanatory factor, numerous scholars advocate for a pivot toward structural determinants and conditions (Abraído-Lanza et al. 2006; Acevedo-Garcia et al. 2012; Bakhtiari, Olafsdottir, and Beckfield 2018; Finch, Frank, and Vega 2004; Holmes 2006). The core argument is that the acculturation hypothesis is tempered by structural elements, such as immigrants’ socioeconomic standing, their social connections, and various experiences contingent on their migratory status (J. D. Allen et al. 2014; Portes and Rumbaut 2006; Riosmena et al. 2015; Rumbaut 1994).

A notable oversight in much of the research is the heterogeneous nature of immigrant populations, even within specific groups like Latin Americans. The ‘Hispanic paradox’ literature acknowledges that selection effects in countries of origin are not universally consistent but rarely delves into the distinguishing features of these nations that might influence immigrant health outcomes. Typically, countries of origin are perceived as static, monolithic entities, with all immigrants from a particular nation experiencing similar exposure levels. Hamilton’s research, however, illustrates that the health of Latin American immigrants can

vary dramatically based not only on their country of origin but also by their birth and migration cohorts (2015). This study seeks to address these areas—namely, the excessive focus on personal choices and the under-recognition of inherent heterogeneity—by exploring how specific traits of countries of origin and distinctions in birth and migration cohorts influence health.

### 2.1.2 Welfare generosity, political institutions, and health

The exploration of health disparities across the world, both within and between countries, has prompted an examination of various structural components, including political structures and welfare state regimes (Beckfield et al. 2015; Gkiouleka et al. 2018; Bambra 2007b). Researchers have increasingly focused on the role of institutions, defined as the guiding principles shaping the political economy, in determining health inequalities (Beckfield et al. 2015). I argue that this focus has not extended sufficiently to health inequalities in Latin American countries, where welfare state structures play a pivotal role in health determinants and outcomes (Rodriguez Loureiro 2017). Analyzing health outcomes among Latin American immigrants in the U.S. provides an invaluable perspective on how these structures might influence health across the life course.

A key structure that has garnered attention is the welfare state. Recognized as a central force in managing welfare services, financial transfers, and policies, the structure of the welfare state profoundly influences health and its distribution (Bambra and Eikemo 2008; Esping-Andersen 1990). Various studies of Latin American countries have classified them into three regimes: state productivist, state protectionist, and familialist (Martínez Franzoni 2008; Rodriguez-Loureiro et al. 2020). However, their relationship with health outcomes largely remains an uncharted territory.

Research on welfare state classifications has investigated its role in shaping an individual's social status and health (Bambra et al. 2009; Espelt et al. 2008; Sacker, Worts, and McDonough 2011). For example, countries with comprehensive welfare provision can ex-



ert greater control over employment arrangements, mitigating adverse effects on population health (Bambra et al. 2014; Rodriguez-Loureiro et al. 2020). In Central America, expansive universal social protections have minimized the detrimental implications of informal employment (Rodriguez Loureiro 2017).

Historically, data suggest that public health expenditure positively impacts national infant mortality rates, independent of economic growth (Conley and Springer 2001). This relationship’s nuances vary with the welfare state structure, indicating that the effects of public health spending are contingent on the state’s framework. In Latin America, the intricate relationship between health inequities and social welfare policies has emerged, with policies like unemployment benefits consistently influencing health across various welfare states (Benavides, Delclós, and Serra 2018).

A more recent study by Morris, Beckfield, and Bambra (2019) on gender-specific cardiovascular disease in Europe accentuated the importance of government investments in early childhood care and parental leave. These findings may offer insights into understanding health inequalities among Latin American immigrants in the U.S., especially given the diverse welfare state regimes in their countries of origin.

In addition to welfare configurations, researchers have delved into how democracy and political inclusion impact population health distribution (Besley and Kudamatsu 2006; Bolyky et al. 2019; Franco, Álvarez-Dardet, and Ruiz 2004; Gerring, Thacker, and Alfaro 2012). Democratic structures catalyze societal growth, subsequently benefiting public health. Studies involving various countries, including Latin American ones, have demonstrated that democracy significantly reduces child mortality rates (Wigley and Akkoyunlu-Wigley 2017).

However, these institutional impacts are not uniformly experienced. For instance, public health expenditure primarily benefits the health conditions of low-income countries (Gupta, Verhoeven, and Tiongson 2003). Nations with good governance demonstrate more efficient public spending on health and education (Rajkumar and Swaroop 2008). This emphasizes the unique complexities of Latin American countries, where welfare is frequently

delivered through alternative means, such as familialist regimes (Rodriguez-Loureiro et al. 2020).

While the work on institutional impacts on health disparities may seem remote from the realm of immigrant adaptation, the implications of their findings resonate the analysis of immigrants' health. Linking the insights from these studies to the immigrant adaptation framework allows discerning the mechanisms by which institutional factors in sending countries influence the health outcomes of newcomers. This connection accentuates the profound influence of early-life exposures to governance and public spending on education and health, and how these elements contour immigrants' health adaptation pathways upon arrival.

In conclusion, literature on health disparities, including those concerning Latin Americans, increasingly underscores the significance of extant institutions, welfare state regimes, and political structures. These elements mold health inequalities by shaping societal constructs and directly affecting individual health. Grasping the nuances of institutional effects and the diverse welfare state regimes in Latin America is crucial for addressing health inequalities in the immigrant populations of the U.S., highlighting the imperative for additional research in this domain.

### 2.1.3 Immigration, institutions, and the life course: looking at the Global South

When specifically examining immigrants' health, institutional-focused research, like the one presented above, has investigated the effects that immigration policies in different territorial units have on immigrants' health. Such literature, not exclusively focused on the USA, shows how exposure to anti-migration rhetoric hinders access to healthcare due to changes in the attitudes and perceptions of health providers (Larchanché 2012; Martinez 2001). Moreover, living in an environment with anti-immigration policies escalates the prevalence of depression, anxiety, or post-traumatic stress disorder (PTSD) (Hacker et al. 2011).

Conversely, residing in settings with policies that curb discrimination against immigrant

groups diminishes health outcome disparities between natives and non-natives (Bakhtiari, Olafsdottir, and Beckfield 2018; Blom, Huijts, and Kraaykamp 2016; Bollini et al. 2009; Malmusi 2015).

This body of work has predominantly concentrated on the institutional arrangements in immigrants' host country. However, immigrants' life histories, and consequently the factors influencing their health status, do not commence upon arrival in their destination country. Combining both life course and institutional perspectives reveals that people's health status is shaped by cumulative exposures to varied institutions throughout their lives.

For immigrants, these exposures are intrinsically more intricate compared to those who remain in the same locale from birth to death. Delving into health inequalities among immigrants from a life course standpoint requires recognition of their multifaceted histories. A majority of immigrants typically migrate between the ages of 20 and 30, which means they undergo significant life course phases—like their childhood—in institutional settings distinct from their host countries.

The intersection of life course and health suggests that social determinants can possess varying impacts based on their timing across an individual's life span. The key theoretical models from the literature are:

1. The cumulative risks model (DiPrete and Eirich 2006; Jones et al. 2019), positing that health deteriorates progressively over time due to consistent exposure to risk factors.
2. The sensitive periods model (Jones et al. 2019), suggesting that while cumulative processes are pivotal, they are not purely linear. Certain life stages may be more susceptible to specific exposures.
3. The critical periods model (Jones et al. 2019), asserting that health is influenced by exposures only at certain pivotal periods in an individual's life.

These models accentuate the importance of situating determinants at specific life stages to comprehend one's health status. This understanding is paramount for immigrant

health, as they encounter distinct determinants compared to their host country counterparts throughout their life courses.

This study aims to bridge this knowledge gap by evaluating Latin American immigrants in the United States and examining the characteristics of their origin countries before their migration.

Moreover, assessing pre-migration exposures among Latin American immigrants in the United States offers a chance to align mainstream institutional health inequality research with the interplay of institutions and health in the global South. Most studies employing a cross-national institutional approach to health disparities have revolved around the welfare states of affluent democracies (Beckfield et al. 2015).

This concentration arises mainly due to two factors: a practical reason and a substantive one. Most health status data, suitable for comparison, have been collated in countries like the United States or in Western Europe. Simultaneously, much of the welfare state literature has historically been centered on prosperous democracies.

There has been limited exploration from the global South perspective on the evolution of welfare states. Some notable studies have centered on Latin America, a region with diverse welfare provision arrangements (Huber, Mustillo, and Stephens 2008; Huber and Stephens 2012). Nonetheless, these studies primarily delve into the origins of welfare state evolution, often overlooking the micro-level repercussions of welfare states on facets of societal life, such as health.

By centering on pre-migration institutional exposures, this study emphasizes Latin American institutions and their relevance for population health in a developed democracy like the United States. Such an endeavor is of utmost importance in an academic landscape where the global South's research is oftentimes perceived as just another case study, while the global North's studies are deemed universally applicable, irrespective of geographical constraints (Collyer 2018).

To holistically comprehend the political determinants of health and the resulting dis-

parities, the scope of research must transcend the confines of the global North. In our rapidly globalizing world, deciphering how political structures from both global spheres interact, influencing individuals' lives, becomes all the more crucial.

#### 2.1.4 Current study

This study examines the disparities in health status among Latin American immigrants residing in the United States, emphasizing differences based on the country of origin and birth cohort. These disparities are seen as outcomes of pre-migration exposure to both welfare generosity and democratization processes. As alluded to earlier, I utilize an institutional life course framework that postulates two primary notions: institutions evolve over time, and in order to understand how institutional exposures shape individuals' health, we must understand them as experienced during a particular phase in an individual's life. The life course literature accentuates childhood as an indispensable period concerning health. During this phase, material conditions play a pivotal role in shaping individuals' health statuses in their later years. Events or conditions encountered during childhood can cast long-standing shadows on health. For instance, studies have demonstrated that childhood socioeconomic status remains persistently tied to health status and functionality in adulthood, independent of subsequent socioeconomic factors (Angelini, Howdon, and Mierau 2019; Brandt, Deindl, and Hank 2012; Cohen et al. 2010; Conroy, Sandel, and Zuckerman 2010; Graves and Nowakowski 2017; Guralnik et al. 2006; Laaksonen et al. 2005; Landös et al. 2018; Milaniak and Jaffee 2019; Van de Mheen et al. 1998).

Considering these aspects, this research evaluates institutional exposures from birth until the age of ten, aligning with the critical periods model. While this perspective is paramount, it does not negate the notion that institutional exposures might have a cumulative influence on health, as underscored by the life course research. The decision to narrow the focus to a specific life course interval is substantiated by two reasons. Firstly, it facilitates consistent observation of the same exposure window for the entire sample in question,

regardless of their migration time to the United States or their age during the interview. Secondly, it aids in optimizing the sample size by country of origin. Embracing a cumulative approach would mandate emphasis on extended exposure durations, resulting in a notable decline in sample size due to the diverse ages at which participants emigrated to the United States.

As previously mentioned, this study considers institutional exposure during childhood across two dimensions: welfare generosity and democratic expansion. Public spending on health and education has been recognized as a cornerstone in the development of welfare states in Latin America. These policy areas have shown their effectiveness in redistributing resources through universal access to education and healthcare (Huber and Stephens 2012). It's noteworthy that neoliberal reforms endorsed by institutions like the World Bank and the IMF primarily targeted pension systems, with no universally accepted guidelines in the fields of education and health. Consequently, this study's focus with respect to welfare generosity is on these two policy areas.

In light of the aforementioned, the subsequent hypotheses are set forth:

Hypothesis 1: Latin Americans exposed to higher levels of welfare generosity from ages 0 to 10, before migration—measured as exposure to social spending on health and education—will report improved health outcomes.

Hypothesis 2: Among Latin Americans in the U.S., those exposed to more intense democratization phases during their formative years before coming to the United States will report better health outcomes.

Hypothesis 3: Given that existing literature has documented various institutional impacts across economic development scenarios, it is expected that the benefits of increased welfare generosity and democratization exposure will be partially moderated by the level of economic development experienced during childhood.

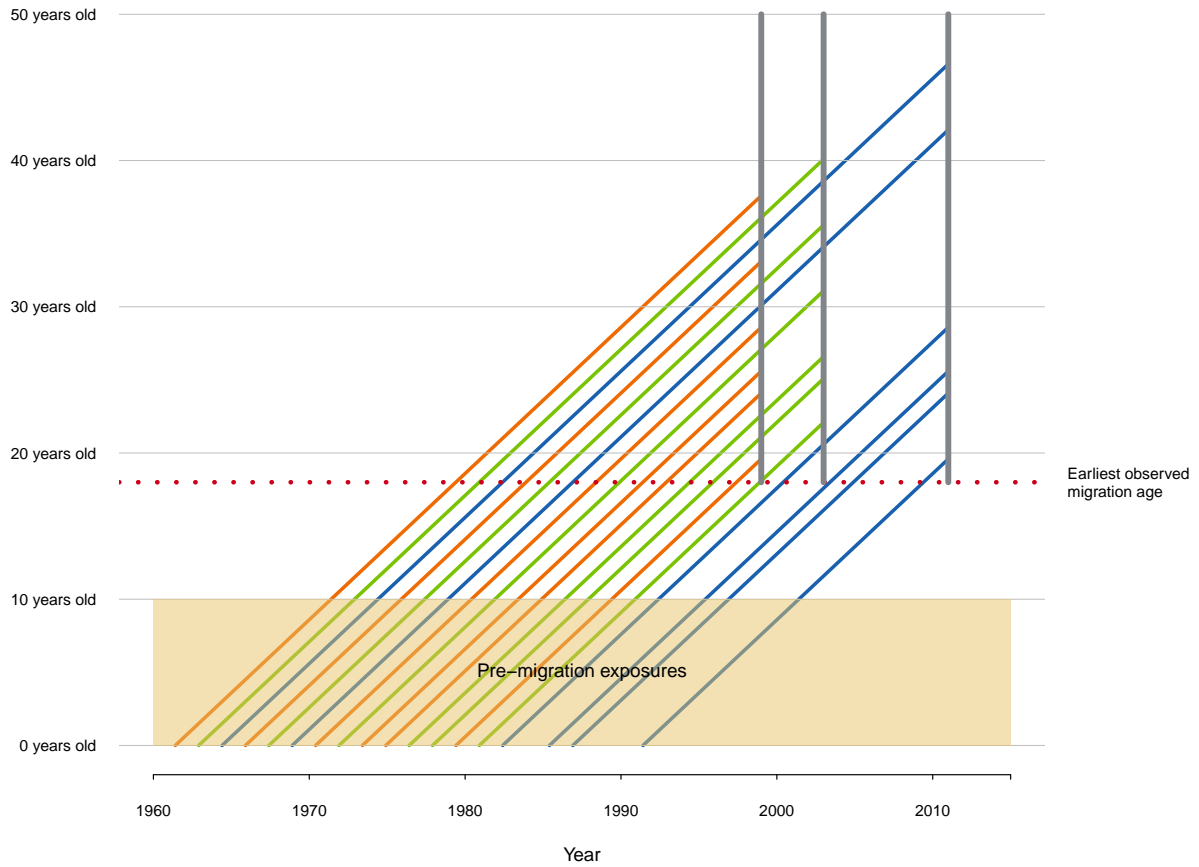
## 2.2 Data and Methods

### 2.2.1 Data

I utilize information on country of origin, year of immigration into the United States, and post-immigration place of residence to reconstruct immigrants' institutional exposure life-histories. To the best of my knowledge, the U.S. March Current Population Survey (CPS) is the sole data source offering a sufficiently large number of immigrants from each country of origin and that incorporates a health measure, country of birth, year of entry to the U.S., and the current state where the interviewee resides. My analysis is based on pooled cross-sectional data from 25 annual waves of the CPS, encompassing interviews conducted annually from 1996 to 2020. Given that the March CPS adopts a monthly rotating household sample, wherein half of the households may appear in consecutive years, I utilize data from odd-numbered survey years to prevent double counting.

To develop institutional exposure indices, I combine this dataset with country-year data pertaining to Latin American countries on two institutional dimensions: the democratic level of the political regime and social expenditure on health and education. The analytical sample encompasses individuals who declare birth in any Latin American country for which both individual- and country-year-level data exist between 1960 and 2009. This sample omits individuals who migrated to the U.S. prior to turning 18 to minimize the potential count of individuals receiving formal primary or secondary education post-migration. By focusing this group, the sample predominantly captures those whose values, beliefs, and early experiences are deeply rooted in their home countries, potentially influencing their assimilation, acculturation, and economic trajectories in the U.S. This focus on late migrants might also limit the generalizability of findings to the broader immigrant population, especially those who migrated at younger ages. The resultant analytical sample comprises 55,910 immigrants hailing from 17 Latin American countries and residing in the U.S. from 1996 to 2020.

Figure 2.1: Lexis diagram: CPS and country-year level data structure



The data's structure is depicted more lucidly in Figure 2.1 using a lexis diagram. On this diagram:

- The X-axis represents the birth year.
- The Y-axis indicates age.
- The vertical gray bars highlight the specific point where each person's data was observed and collected cross-sectionally (a CPS wave)
- Diagonals, or lifelines, trace the period from when an individual was born up to the age and year they participated in an interview. Each diagonal's color denotes a different cross-section of the CPS utilized for analyses. Therefore, each color ends at a different



black bar.

Using the details from birth year and country-of-birth, the figure showcases how pre-immigration exposure variables were constructed for ages between 0 and 10. It's also worth noting that every individual in the sample migrated to the U.S. only after reaching 18 years of age.

## 2.2.2 Variables

### Self-reported health

Although the primary objective of the March CPS is unemployment measurement, it incorporated self-reported health from 1996 onward. Respondents were prompted to gauge their health status, classifying it on a scale ranging from excellent to poor.

Studies indicate that self-reported health robustly predicts morbidity and mortality (DeSalvo et al. 2006; Goldman, Glei, and Chang 2004; Idler, Russell, and Davis 2000). Nonetheless, this metric has inherent constraints as a definitive health measure. Among Latin American immigrants, the longer their U.S. residency, the more reliably self-reported health forecasts mortality (Finch, Frank, and Vega 2004). In the broader population, the correlation between self-reported health and mortality varies by socioeconomic status, being more pronounced among higher SES individuals (Dowd and Zajacova 2007). This suggests potential anchoring effects, where respondents assess health relative to their peers, potentially leading the most disadvantaged to overrate their health. In a similar vein, Dowd and Todd (2011) illustrated that compared to non-Hispanic Whites, Hispanics tend to overstate good health when evaluating vignettes. Additionally, the CPS administered the health question in either English or Spanish, and previous research suggests that the Spanish translation, especially converting the term "fair" to "regular," might produce slightly skewed results when amalgamating the fair and poor categories (Viruell-Fuentes et al. 2011).

My research design mitigates several of these challenges. Firstly, I exclusively consider the Hispanic migrant cohort, meaning a majority of my sample primarily speaks Spanish, and

the CPS is consistently available in both English and Spanish. Regrettably, the language used during the interview is not accessible for the CPS March Supplement. Moreover, I refrain from drawing comparisons with any native-born Americans, where linguistic discrepancies might introduce more pronounced biases. To further mitigate these concerns, I retain the original form of self-reported health without merging any categories. Lastly, addressing the U.S. residency duration as a variable influencing the relationship between self-reported health and mortality, all my models account for the duration of U.S. residency.

## Predictors

The three principal independent variables in my study quantify the level of exposure to two institutional aspects of immigrants' country of origin between the ages of 0 and 10: welfare generosity (represented as social spending in health and education), and the degree of democracy/autocracy in governance. The expenditure variables derive from the Latin American Welfare Dataset 1960-2014, constructed by Huber and Stephens (2015). These are expressed as a percentage of GDP. The dataset amalgamates country-year measures from the UN's Economic Commission for Latin America and the Caribbean (ECLAC) across four distinct time series. It also includes data from the IMF's Government Financial Statistics Yearbook, an annual publication that "provides intricate data on revenue, expense, transactions in assets and liabilities, and stock positions of the general government sector and its subsectors as furnished by nations" (Fund 2018). Notably, the IMF data omits state and local expenditures on health and education. Given that many countries allocate substantial funds at the subnational level, the majority of country-year observations for health and educational spending originate from an ECLAC source that accounts for subnational spending. In instances where data was absent, it was supplemented using the most extensive available time series, whether ECLAC or IMF.

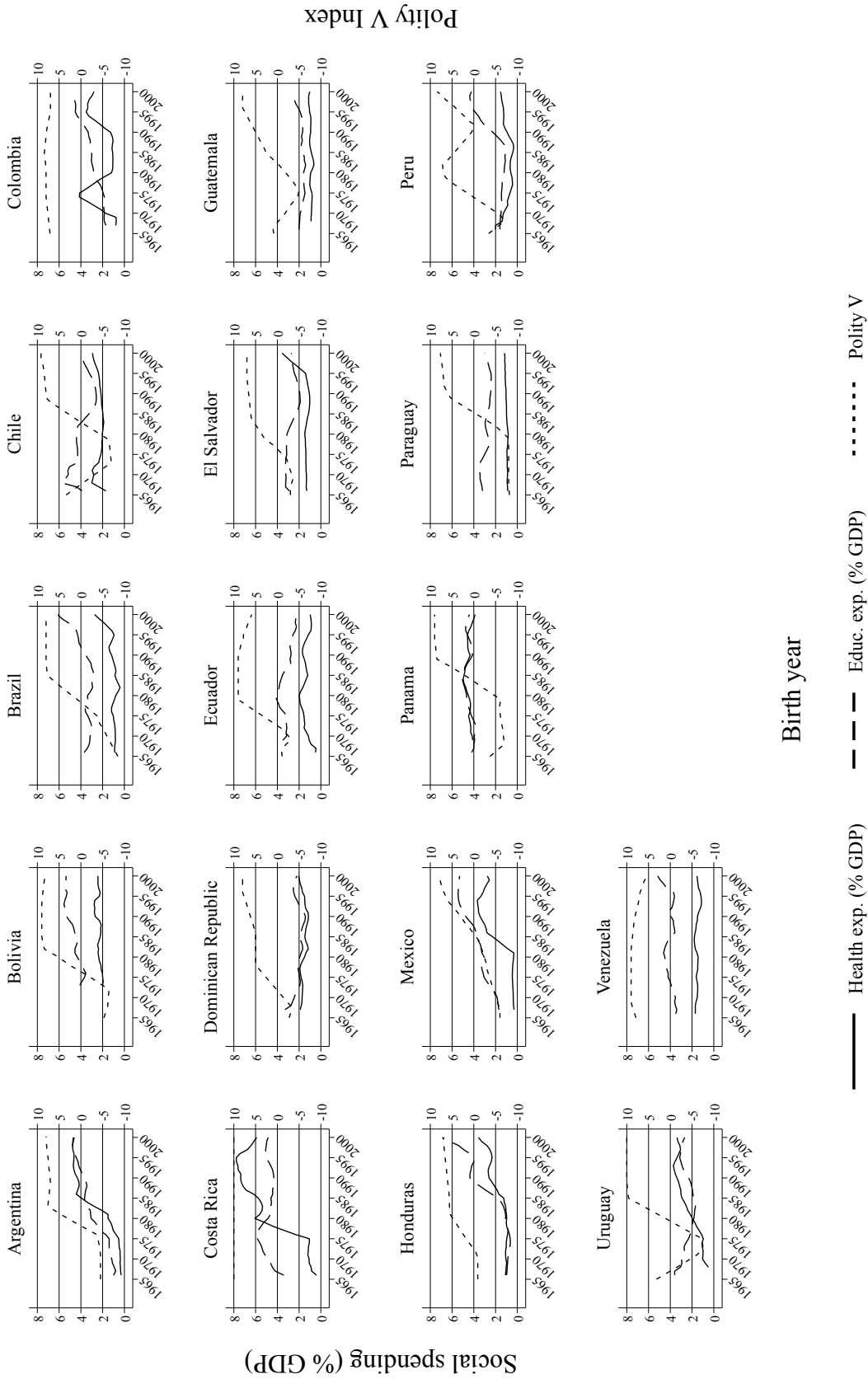
The democracy/autocracy metric stems from the Polity V project (Center for Systemic Peace 2020). This project catalogues the authority characteristics of states and territories

globally from the 1800s to 2018. The variable used for analysis spans from -10 (strongly autocratic) to +10 (strongly democratic). It is deduced by subtracting the autocracy index value from the democracy index value, both of which oscillate between 0 and 10. Here, 0 signifies non-autocratic (or non-democratic) while 10 represents complete autocracy (or democracy). Both indices encompass measures like competitiveness of executive recruitment, openness of executive recruitment, constraints of chief executive, regulation of participation, and competitiveness of participation. However, they don't share any mutual categories because some polities exhibit mixed authority characteristics, thus receiving intermediate scores on both indices.

Given my life course approach, where institutional exposure is dynamic, exposure differentiates both between countries and within them on an individual level. I formulated an index for each variable that measures exposure from ages 0 to 10 for every participant. For instance, if someone was born in Perú in 1985, their exposure level to educational expenditure corresponds to the average of social spending on education in Peru as a percentage of its GDP between 1985 and 1994, both years inclusive.

Figure 2.2 visualizes the country-year variation for these factors. Generally, there's considerable variation within and among countries over time concerning people's exposure levels. In numerous countries, younger cohorts have more exposure to democratic systems compared to their older counterparts. Costa Rica stands out with consistently high democratic exposure levels, while Perú sees fluctuating degrees of democracy/autocracy exposure. Chile transitioned from democracy, to autocracy, and back to democracy. Regarding exposure to health social spending, many countries remain stable, barring exceptions like Costa Rica, Uruguay, and Argentina, where health care expenditures have a clear upward trend. Similar variations are noted in educational spending, albeit with a slight upward trend in numerous nations.

Figure 2.2: Evolution of exposure variables across countries and birth cohorts



## Control variables

My analysis adjusts for an array of control variables known to correlate with health status at both individual and country-year levels. I factor in age and gender, anticipating health status to decline with age and noting gender differences as illustrated by prior studies (Ahmed et al. 2016; Cullen et al. 2016; Hosseinpoor et al. 2012; Krieger 2003; Mokdad et al. 2016; Schiebinger et al. 2011; Sen et al. 2007; Springer, Stellman, and Jordan-Young 2012). Socioeconomic factors encompass current income and educational achievement. I also factor in marital or partnership status and ascertain if immigrants have become U.S. citizens, which might influence their healthcare accessibility (Van Natta et al. 2019). Regrettably, the dataset does not provide information on legal status. While numerous studies on migration and health in the U.S. consider the duration of U.S. residence (Dowd and Todd 2011; Read and Emerson 2005), all my models include the year of migration, interview year, and age at the interview time. This effectively accounts for the duration respondents have resided in the U.S. without directly incorporating this variable into the models. At the country-year level, I also take into account immigrants' exposure to their country of origin's economic development by averaging the GDP per capita from ages 0 to 10. Previous research indicates that economic development can significantly impact population health (Lange and Vollmer 2017) and public expenditure alike.

It is essential to discuss the health selectivity topic and any possible variations based on migration timing. The premise that adjusting for the migration year alleviates disparities in health selectivity across different migration ages demands further clarification. While controlling for the migration year accommodates temporal changes, a deeper exploration could probe how migration timing during childhood affects health selectivity and subsequent health adaptation. This refined understanding would bolster the validity of my assumptions and enrich my findings' interpretation.

### 2.2.3 Analytical strategy

I estimate a person's health status using an ordered logistic model, as follows:

$$Y_i = X_i\beta + A_i\gamma + C_i\delta + R_i\theta + U_i\mu + R_iU_i\alpha + Z_i\nu + \epsilon_i$$

Where  $i$  denotes individuals and  $Y$  represents the health outcome of interest.  $X$  is a vector of all demographic controls mentioned previously.  $A$  is a vector of exposure indices between the ages of 0 and 10.  $C$  is a vector of binary variables indicating an individual's cohort of arrival to the United States.  $R$  is a vector of dummies denoting the country of origin, and  $U$  is a vector of dummies for the year in which the survey took place. I also include an interaction term between the year of migration to the United States and the country of origin. This is to account for linear trends of change in the country of origin at the time of migration, allowing control for unobserved changing characteristics of the country of origin that might influence individuals to migrate to the U.S. Lastly, because factors influencing health care access and health status differ across U.S. regions, I incorporate a vector of dummies accounting for immigrants' region of residence in the U.S. at the time of the survey,  $Z$ .

I employ an ordered logistic regression model to estimate the self-reported health status. I incorporate country fixed effects to control for any constant unobserved characteristic of the birth countries, given the self-selection phenomenon documented in the immigration and health literature. Because of this, coefficients for the exposure variables can be interpreted as the association of a within-country change in exposure with an individual's health status.

## 2.3 Results

In this section, I present the primary findings of the research. Initially, I detail the variation in self-reported health status across primary independent variables. Table 2.1 displays means and proportions for most independent variables in the study, segmented by health status. Among Latin Americans residing in the U.S., categories such as women, individuals with a

higher level of educational attainment, those who are single, possess a higher income, have attained naturalization, are of a younger age, and migrated at an earlier stage in life but have resided in the U.S. for a shorter duration appear to report superior health status. Moreover, the bivariate analysis reveals that individuals reporting superior health status were subject to greater levels of health and educational expenditure and notably fewer autocratic regimes.

Figure 2.3 illustrates the relationship between health status and country of birth among Latin American immigrants in the U.S. from the analytical sample. Of the 17 countries represented in the sample, immigrants from Argentina, Brazil, Bolivia, Colombia, Uruguay, Honduras, and Venezuela indicate a decreased likelihood of reporting a fair or poor health status, adjusting for the age of the respondents and the year they participated in the interview. Conversely, immigrants from the Dominican Republic exhibit the highest likelihood, around a 10% probability, of reporting a poor or fair health status. Nonetheless, this data does not elucidate the attributes of these countries of origin that might elucidate these variances. Hence, I proceeded with a multivariate analysis focusing on the primary independent variables.

To delve deeper into the link between health and pre-migration institutional exposure, I undertook multivariate analysis. As indicated in the immigration and health literature, there exist self-selection effects in relation to those who migrate from Latin American nations. Furthermore, the profiles of migrants differ across countries due to the unique characteristics of each nation. Consequently, I implemented country-of-birth fixed-effects in all models to account for unseen characteristics of originating countries that might correlate with self-selection and, thus, health. I incorporated an interaction term between the year of migration and the country of origin to address unseen country-linear trends and survey-year fixed effects. I also adjusted for the U.S. region of residence at the time of the interview. Table 2.2 presents the log-odds from an ordered logistic regression model concerning the health outcome of interest (full models are shown in Appendix A). All exposure variables underwent standardization. Models 1A to 1E prioritize health expenditure as an independent

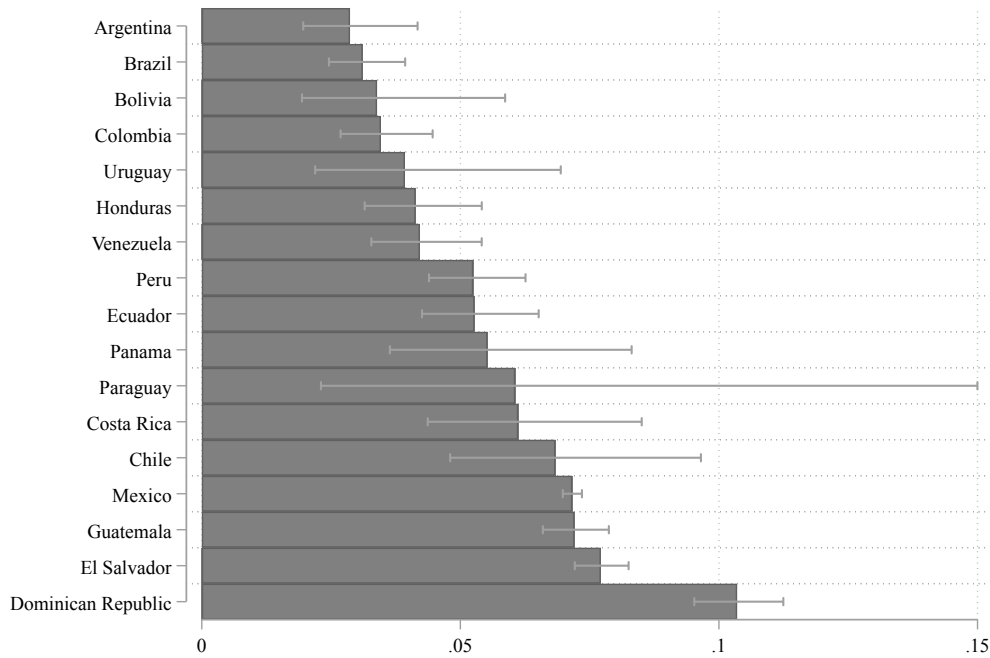
Table 2.1: Descriptive statistics by self-reported health status

	Full sample	Fair	Poor	Good	Very good	Excellent	p-value
Exposure: health spending (% GDP)	0.94 (0.81)	0.82 (0.68)	0.86 (0.73)	0.88 (0.76)	0.94 (0.81)	1.02 (0.87)	0.000
Exposure: educ. spending (% GDP)	2.67 (0.88)	2.46 (0.83)	2.56 (0.84)	2.63 (0.85)	2.68 (0.88)	2.73 (0.92)	0.000
Exposure: autocracy (-10) / democracy (+10)	-1.62 (4.03)	-2.41 (3.76)	-2.28 (3.66)	-2.02 (3.68)	-1.58 (4.03)	-1.06 (4.40)	0.000
Exposure: GDP per capita (in thousands USD)	6.77 (3.05)	6.47 (2.91)	6.63 (3.00)	6.90 (3.03)	6.73 (3.08)	6.70 (3.03)	0.000
Female	0.39 (0.49)	0.54 (0.50)	0.47 (0.50)	0.39 (0.49)	0.38 (0.49)	0.37 (0.48)	0.000
Educ: no formal education	0.01 (0.12)	0.02 (0.14)	0.02 (0.15)	0.01 (0.12)	0.01 (0.12)	0.01 (0.11)	0.000
Educ: less than primary	0.28 (0.45)	0.33 (0.47)	0.33 (0.47)	0.31 (0.46)	0.27 (0.44)	0.24 (0.43)	
Educ: less than high school	0.20 (0.40)	0.16 (0.36)	0.20 (0.40)	0.22 (0.41)	0.21 (0.41)	0.18 (0.39)	
Educ: high school or equivalent	0.29 (0.45)	0.28 (0.45)	0.26 (0.44)	0.29 (0.45)	0.29 (0.45)	0.29 (0.45)	
Educ: more than high school	0.22 (0.41)	0.22 (0.41)	0.18 (0.38)	0.17 (0.37)	0.22 (0.41)	0.28 (0.45)	
Marital status: single	0.29 (0.45)	0.25 (0.43)	0.24 (0.43)	0.29 (0.45)	0.29 (0.45)	0.30 (0.46)	0.000
Marital status: married	0.62 (0.49)	0.58 (0.49)	0.64 (0.48)	0.62 (0.49)	0.62 (0.48)	0.61 (0.49)	
Marital status: separated/divorced	0.09 (0.29)	0.16 (0.37)	0.12 (0.32)	0.09 (0.29)	0.08 (0.28)	0.09 (0.28)	
Marital status: widowed	0.01 (0.07)	0.01 (0.09)	0.01 (0.08)	0.01 (0.08)	0.00 (0.07)	0.000 (0.07)	
Income (in thousands 2000 USD)	19.78 (27.31)	14.31 (14.61)	16.66 (26.25)	17.94 (22.83)	20.20 (28.00)	22.23 (31.28)	0.000
Citizenship status: naturalized	0.16 (0.36)	0.19 (0.39)	0.16 (0.37)	0.14 (0.35)	0.16 (0.36)	0.17 (0.38)	0.000
Age: 18-34	0.51 (0.50)	0.34 (0.48)	0.40 (0.49)	0.48 (0.50)	0.52 (0.50)	0.56 (0.50)	0.000
Age: 35-49	0.46 (0.50)	0.61 (0.49)	0.55 (0.50)	0.49 (0.50)	0.46 (0.50)	0.42 (0.49)	
Age: 50+	0.02 (0.15)	0.04 (0.20)	0.04 (0.21)	0.03 (0.16)	0.02 (0.15)	0.02 (0.13)	
Year of migration to the US	2000.32 (7.08)	1998.69 (7.09)	1999.16 (7.15)	1999.94 (6.96)	2000.42 (7.05)	2000.91 (7.18)	0.000
N	55,910	553	2,945	17,826	19,437	15,149	

Note: numbers are proportions, unless otherwise stated. SD in parentheses. P-values correspond to ANOVA for continuous variables, and  $\chi^2$  for categorical variables.



Figure 2.3: Probability of reporting poor health or worse by country of birth



N = 107,613.

Note: 95% confidence intervals are displayed. Values are derived from a logistic regression model predicting the probability of reporting fair or poor health based on country of birth, adjusted for respondent age and interview year.

variable, while Models 2A to 2E examine the link between educational spending and self-reported health. Models 3A to 3E spotlight democratic expansion. Lastly, Model 4 displays the comprehensive model, which encompasses all independent variables, controls, and fixed effects.

A surge in one standard deviation regarding exposure to health spending relative to a country's GDP augments the log-odds of reporting a superior health status by 0.07 ( $p = 0.041$ ). This adjustment equates to a 7.3% ( $p = 0.044$ ) increase in the likelihood of reporting a better health status when individual controls are excluded. Nevertheless, this relationship loses significance as individual controls are included, and when other exposure variables serve as covariates. Yet, this remains substantively pertinent when considering that individuals born in Mexico in 1967 experienced an expenditure level around 0.3% of Mexico's GDP. In contrast, those born post-1987 in Costa Rica encountered over 7% of health expenditure relative to Costa Rica's GDP. This discrepancy signifies a difference in the predicted

probability of reporting excellent health status of over 8 percentage points, roughly tripling the difference in predicted probability between males and females for the same health status level.

Regarding social spending on education, there is a positive association, but it is not statistically significant in any of the models, and it approaches zero when the other exposure covariates are considered. Interestingly, the level of exposure to how democratic or autocratic the political regime people were born in has a large and significant effect, consistent across all models. An increase in one standard deviation in the value of exposure—more democratic—increases the log-odds of reporting better health status by approximately 0.2, depending on the model. In terms of odds ratios, an increase in one standard deviation in the level of democratic exposure increases the odds of reporting a better health status by 19.4% when all exposure variables are included together with individual controls, exposure to economic development, and fixed-effects. This association can also be interpreted in probability terms, showing a 13.7 percentage points difference in the probability of reporting ‘excellent’ health—explained by exposure to democratic/autocratic regime—between someone born in Brazil in 1965—the least democratic regime—and someone born in Costa Rica—the most democratic regime throughout the entire period.

One can expect, based on the literature, that these associations will vary across institutional characteristics of the countries. I test whether the association of early-life exposure to health and educational spending, and the nature of the regime in which people lived during childhood—democratic or autocratic—varied across the level of economic development people experienced in their countries of origin during the same period. Figure 2.4 shows the average marginal effect—in probability points—on the probability of reporting an ‘excellent’ health status for each of my exposure variables of interest, across different levels of exposure to economic development, estimated from models 1D, 2D, and 3D. For both welfare generosity variables, the interaction with economic development is positive and significant. As the level of economic development people experienced in their early lives rises, the association

Table 2.2: Ordered logit model of self-rated health (log odds)

	Health spending					Educational spending				
	Model 1A	Model 1B	Model 1C	Model 1D	Model 1E	Model 2A	Model 2B	Model 2C	Model 2D	Model 2E
Health spending (% of GDP) (std)	0.070* (0.041)	0.073 (0.045)	0.003 (0.032)	0.004 (0.029)	-0.007 (0.030)					0.022 (0.025)
Health spending (% of GDP) (std) *			0.142*** (0.033)	0.146*** (0.031)	0.097*** (0.026)					
GDP per capita (2000 USD) (std)						0.047 (0.090)	0.056 (0.091)	0.055 (0.056)	0.065 (0.057)	0.007 (0.034)
Educational spending (% of GDP) (std)								0.092** (0.042)	0.092** (0.040)	0.033 (0.032)
Educational spending (% of GDP) (std) *										0.170*** (0.050)
GDP per capita (2000 USD) (std)										
Autocracy - democracy index (std)										
Autocracy - democracy index (std) *										
GDP per capita (2000 USD) (std)	0.122*** (0.019)	0.145*** (0.020)	0.260*** (0.028)	0.288*** (0.030)	0.195** (0.077)	0.059 (0.100)	0.073 (0.097)	0.045 (0.074)	0.059 (0.070)	0.075 (0.058)
Individual-level controls	NO	YES	NO	YES	YES	NO	YES	NO	YES	YES
Survey year FE	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Country-of-birth FE	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Country-year of migration linear trends	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Cut point 1	63.945*** (1.921)	63.951*** (2.585)	86.093*** (8.960)	86.773*** (9.033)	70.806*** (6.386)	69.667*** (3.069)	69.392*** (3.726)	83.167*** (8.340)	83.092*** (9.319)	60.663*** (7.956)
Cut point 3	65.849*** (1.917)	65.859*** (2.586)	87.997*** (8.968)	88.681*** (9.045)	72.714*** (6.373)	71.571*** (3.054)	71.299*** (3.721)	85.071*** (8.349)	85.000*** (9.332)	62.571*** (7.947)
Cut point 4	68.098*** (1.909)	68.125*** (2.576)	90.246*** (8.982)	90.948*** (9.064)	74.982*** (6.374)	73.820*** (3.020)	73.566*** (3.699)	87.319*** (8.362)	87.267*** (9.347)	64.839*** (7.937)
Cut point 5	69.603*** (1.910)	69.648*** (2.582)	91.752*** (8.976)	92.471*** (9.058)	76.506*** (6.374)	75.324*** (3.028)	75.088*** (3.707)	88.825*** (8.366)	88.789*** (9.351)	66.363*** (7.948)
Observations	55,910									

Country-of-birth clustered standard errors in parentheses.

\*\*\* p<0.01, \*\* p<0.05, \* p<0.1.

\*Country-year of migration linear trends' corresponds to an interaction between the year of migration and the country of birth.

Individual level controls include gender, age at the time of survey, educational attainment, marital status, income, citizenship status, and region of residence in the United States.

Table 2.2: (cont'd) Ordered logit model of self-rated health (log odds)

	Democratic expansion				All	
	Model 3A	Model 3B	Model 3C	Model 3D	Model 3E	Model 4
Health spending (% of GDP) (std)					0.009 (0.032)	0.031 (0.026)
Health spending (% of GDP) (std) *						
GDP per capita (2000 USD) (std)					-0.014 (0.048)	-0.005 (0.047)
Educational spending (% of GDP) (std)						
Educational spending (% of GDP) (std) *						
GDP per capita (2000 USD) (std)	0.176*** (0.056)	0.190*** (0.058)	0.200*** (0.042)	0.215*** (0.044)	0.214*** (0.046)	0.177*** (0.051)
Autocracy – democracy index (std)			0.035 (0.028)	0.037 (0.027)	0.036 (0.037)	
Autocracy – democracy index (std) *						
GDP per capita (2000 USD) (std)	0.050 (0.039)	0.070* (0.037)	0.044 (0.029)	0.064** (0.026)	0.079 (0.061)	0.088 (0.066)
Individual-level controls	NO	YES	NO	YES	YES	YES
Survey year FE	YES	YES	YES	YES	YES	YES
Country-of-birth FE	YES	YES	YES	YES	YES	YES
Country-year of migration linear trends	YES	YES	YES	YES	YES	YES
Cut point 1	57.939*** (3.747)	57.351*** (3.717)	58.775*** (4.595)	58.180*** (4.068)	58.189*** (3.963)	54.805*** (3.084)
Cut point 3	59.843*** (3.734)	59.259*** (3.707)	60.679*** (4.590)	60.087*** (4.066)	60.097*** (3.933)	56.713*** (3.068)
Cut point 4	62.092*** (3.741)	61.526*** (3.711)	62.928*** (4.613)	62.355*** (4.090)	62.365*** (3.913)	58.980*** (3.053)
Cut point 5	63.598*** (3.746)	63.050*** (3.719)	64.434*** (4.611)	63.879*** (4.091)	63.889*** (3.913)	60.504*** (3.062)
Observations	55,910					

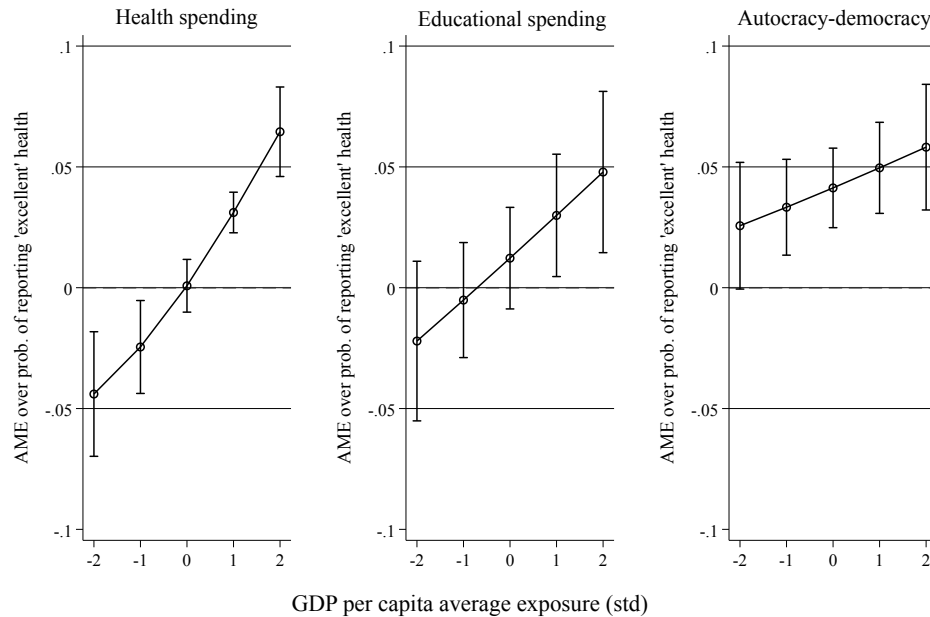
Country-of-birth clustered standard errors in parentheses.

\*\*\* p<0.01, \*\* p<0.05, \* p<0.1.

'Country-year of migration linear trends' corresponds to an interaction between the year of migration and the country of birth.

Individual level controls include gender, age at the time of survey, educational attainment, marital status, income, citizenship status, and region of residence in the United States.

Figure 2.4: Average marginal effect of exposure to health spending, educational spending, and autocracy-democracy on the probability of reporting ‘excellent’ health status, by level of exposure to economic development



Note: The average GDP per capita exposure is \$6,839 USD, and each standard deviation corresponds to \$3,301 USD.

between the generosity variables and the probability of reporting an ‘excellent’ health status also increases. Two interesting findings emerge. When people experience levels of economic development below the average of what was experienced by Latin American immigrants living in the U.S.—that is, below 6,800 USD per capita—a higher level of spending in health care reduces the probability of reporting an ‘excellent’ health status. Only when the level of exposure exceeds the average does the association become positive and significant.

A similar pattern is observed with educational spending. However, the effect on the probability of reporting an ‘excellent’ health status is always positive. This implies that educational spending becomes relevant for explaining individuals’ health status only when it is experienced alongside relatively higher levels of economic development. Additionally, when all other exposure variables are considered, the interaction loses significance (see model 2E). Further analyses (not shown) revealed that it was the inclusion of the level of exposure to democratic expansion that caused the significant interaction to disappear, suggesting

that variations in the association between education spending and health as a function of economic development are partly explained by the level of democratic expansion. Lastly, regarding the democratic exposure variable, its effect does not significantly vary across levels of economic development exposure, remaining positive and significant across the distribution. This suggests that the effect democratic exposure has on health is independent of the level of economic development people experience.

## 2.4 Discussion

The Hispanic Paradox literature shows that Latin American immigrants usually arrive in the U.S. healthier than native-born Americans (Palloni and Arias 2004; Abraído-Lanza, Echeverría, and Flórez 2016; Van Hook, Frisco, and Graham 2020; Seicean et al. 2011; Ruiz, Steffen, and Smith 2013). However, their health deteriorates as they spend more time in the U.S (Boen and Hummer 2019; Palloni and Arias 2004; Borrell et al. 2022). I pioneer an exploration of pre-migration conditions, shedding light on the diverse health statuses among Latin Americans in the United States. Breaking new ground, I place emphasis on life course exposure to political institutions, a dimension previously underexplored. Specifically, I elucidate how the variation in the health status of Latin Americans living in the United States is partly influenced by their exposure to institutional arrangements between the ages of 0 and 10. I found that early life exposure to varying institutional forms plays a significant role in explaining variations in immigrants' health status.

Consistent with prior research, I identify country-of-origin and birth-cohort variations in health status among Latin American immigrants (Hamilton, Palermo, and Green 2015). My analysis further indicates that immigrants who experienced more democratic contexts during their childhood, pre-migration, report better health status compared to those who spent part of their childhood in less democratic regimes. While previous studies, primarily from the social development literature, have emphasized the significance of democratic regimes for population health (Besley and Kudamatsu 2006), they often employ a cross-

sectional approach, assuming consistent exposure to democracy throughout one's life. A life course view requires looking at institutional changes at different life stages.

In today's context of a global pandemic, this perspective is particularly salient (Baumer et al. 2020; Sirotich and Hausmann 2020). Studies have demonstrated that more democratic countries exhibit a higher prevalence of COVID-19 infections but a notably lower fatality rate (Karabulut et al. 2021). Given that diseases like COVID-19 disproportionately affect various age groups, the life course approach to institutional influences in health disparities research becomes crucial. Earlier research has emphasized the role of democracy in reducing child mortality (Doces 2007; Lena and London 1993; Wigley and Akkoyunlu-Wigley 2017). This underscores the importance of evaluating exposure to democratic regimes during pivotal periods like childhood to understand health disparities, especially in regions with rapid political changes like Latin America.

In alignment with prior findings, results also suggest that social spending is pivotal for understanding population health (Conley and Springer 2001). In a first-of-its-kind approach, I explore how life course exposures to welfare generosity shape health disparities in immigrant populations. For the non-migrant population in the United States, the place of residence remains relatively consistent. In contrast, for immigrants, policy exposure varies even within cohorts. Solely examining U.S. policies to explain health disparities overlooks part of the larger narrative. Future research should prioritize the development of more refined indicators of welfare generosity and other policy dimensions in sending countries, especially given the stratified health care systems in many Latin American nations.

Results also underline the importance of considering potential stratifications in the effects of welfare generosity. Using a broad country-year stratification measure—the level of economic development exposure during childhood—I demonstrate that higher spending on health and education corresponds to better health status only when combined with relatively higher levels of economic development. As Dawson (2010) argues, regions with advanced economic development often reflect stronger rule of law, ensuring market efficiency and state

functionality. A generous welfare system, combined with a state with a robust infrastructure, more effectively fosters children’s wellbeing, subsequently enhancing their long-term health. Exploring the mechanisms that detail the moderating influence of economic development is a crucial avenue for future research.

This study is not without its limitations. Primarily, I utilize cross-sectional data to address inherently longitudinal questions. Ideal data sets would encompass: (1) panel data for a substantial number of Latin American immigrants in the U.S., (2) pre and post-migration information about these immigrants, and (3) data on their residence throughout their lives. While such data sets are elusive and almost impossible to prospectively compile, there have been efforts to reconstruct life events using cross-sectional data. However, available surveys, such as HRS or SHARE, do not contain a sufficient immigrant sample segmented by their country of origin for my analysis.

Using the ‘critical periods’ approach, I do not account for the cumulative effects of institutional exposures. While these cumulative effects are plausible, my approach prioritizes sample size consistency and ensures a comparable exposure window for all individuals. Data sets with features like retrospective data could better account for these cumulative effects and highlight their significance during specific life stages.

While my study aims to differentiate the impacts of pre-migration conditions from post-migration experiences, it’s vital to recognize the inherent challenges in completely isolating these factors. Migrant selectivity, migration experiences, and sending country conditions are deeply interconnected, complicating the task of solely attributing observed health outcomes to early-life exposures. Economic adversity (Stark and Taylor 1989), educational prospects (Bernard and Bell 2018), and healthcare accessibility (Lin et al. 2016) all influence international migration decisions. Therefore, I stress the importance of addressing potential overlaps between sending country effects and migrant selectivity.

Furthermore, acknowledging specific institutional shifts in sending countries during significant immigration waves provides essential context not directly addressed in this study.



Historical events such as the collapse of Venezuelan democracy or the neoliberal turn in various Latin American countries offer insights into the institutional dynamics potentially shaping immigrants' early-life exposures. Incorporating these historical transitions would offer a more comprehensive understanding of how pre-migration institutional alterations intersect with post-migration health adaptation experiences.

Despite these limitations, this study serves as a foundational step in recognizing immigrants' health as the culmination of institutional influences they have encountered throughout their lives. In doing so, it bridges divergent sociological perspectives like political sociology, health sociology, and life course research. Changing institutions profoundly affect our health, and this is especially significant for individuals transitioning between different institutional settings.

To genuinely embrace this perspective, future research must discern how the characteristics of migrants' countries of origin interact with exposures in their destination countries. With the rise of right-wing populism in developed countries and associated anti-immigrant narratives known to adversely affect immigrant health (Bakhtiari 2021), this becomes imperative. Moreover, the ongoing dynamics in migrants' countries of origin remain influential even post-migration. For example, Sønderskov et al. (2021) illustrate how terrorism in refugees' countries of origin detrimentally affects their mental health in their new residences. Given the political turbulence and violence in regions like Latin America over the past 50 years (Pearce 2010; Rivera 2016), this can be an instrumental perspective for comprehending health disparities. Additionally, understanding how state-level attributes within the U.S. interact with characteristics from immigrants' countries of origin remains an unresolved query. Do certain state policies amplify or mitigate the effects of origin country attributes on health? This question demands an in-depth exploration from both an institutional and life course standpoint.

## CHAPTER 3

# LIFE COURSE DIFFERENTIATION AND WOMEN'S MENTAL HEALTH: THE MODERATING ROLE OF DEFAMILIZATION POLICIES IN 15 EUROPEAN TERRITORIES

Work and family are two of the most significant dimensions of social life. The way in which we experience them subjects us to various factors that influence our health: occupational stressors (Chandola et al. 2007), accumulation of material resources (Lantz et al. 2005; Read, Grundy, and Foverskov 2016), and the development of social networks (Grundy and Sloggett 2003). The second demographic transition has led to numerous changes in work and family patterns both between and within societies (Lesthaeghe 1995; Van de Kaa 1987), enhancing what scholars term as ‘life course differentiation.’ Post-materialist values have complicated family life course trajectories by introducing new phases in family development. For instance, stages such as returning to the parental home (Goldscheider 1997) have become significantly more prevalent than in the past. This trend also holds for cohabitation (Heuveline and Timberlake 2004), divorce (Schoen and Canudas-Romo 2006), remarriage (Coleman, Ganong, and Fine 2000), and single parenthood (Heuveline, Timberlake, and Furstenberg Jr 2003). For a comprehensive review, see (Buchmann and Kriesi 2011). Over time, and in various contexts, family formation trajectories have indeed grown more intricate (Van Winkle 2018).

Demographic, economic, and cultural changes have notably transformed employment trajectories across both time and geographical locations. In industrial societies, work trajectories have grown more intricate and unstable, leading to decreased predictability (Beck 2008). Prior research indicates that the degree of differentiation among work trajectories varies more considerably between countries than between cohorts. This suggests that certain country-specific characteristics can elucidate this variation (Zagel and Van Winkle 2020).

However, our understanding is limited regarding the impacts of these evolving life trajectories on individuals’ mental health in their later years. Health status in later life

stems from accumulated exposures to either advantages or disadvantages throughout one's life. These influences vary based on the life stages—childhood, youth, or adulthood—in which they are encountered, and they may be associated with specific dimensions of social life, such as work, family, education, or social networks (Chen et al. 2018; Dannefer 2003).

Due to a combination of structural and societal factors, women often find themselves in more vulnerable positions, leading them to potentially face more pronounced health-related disadvantages relative to men. Specifically, socially disadvantaged women have a higher risk compared to their male counterparts of developing medical conditions like hypertension (Lucumi et al. 2017), depressive symptoms (Anand, Esposito, and Villaseñor 2018; Engels et al. 2019; Leupp 2017), disability (Landös et al. 2018), and heart disease (Diaz-Toro et al. 2018). As a result, it is important to explore how specific life course patterns impact women's health later in life, aiding our understanding of this phenomenon and highlighting potential areas for public policy intervention. The lives of individuals should be comprehended within their distinct social contexts (Corna 2013).

Mental health, in particular, is a crucial health outcome to study. It not only reflects the immediate well-being of individuals but also has long-term implications for physical health, social relationships, and economic productivity. In the context of evolving life trajectories and societal shifts, mental health serves as a barometer for how these changes impact individuals well being (J. Allen et al. 2014). In addressing this, I incorporate the concept of a gendered welfare state to examine how accumulated (dis)advantages throughout life influence health outcomes for women in later life, specifically focusing on policies that traditionally place welfare responsibilities on women.

I particularly focus on defamilization policies. At their core, these are policies that aim to reduce individuals' reliance on family for their well-being and economic security. These policies promote individual autonomy, especially for women, by ensuring that welfare provisions are not solely tied to familial roles or relationships (Lohmann and Zagel 2016). Examples include state-supported childcare services, which allow women to participate in

the workforce without being primarily responsible for child-rearing, or pension schemes that recognize non-employment related contributions, ensuring that women who take time off for caregiving are not penalized in their old age.

My central research question is: How do gendered welfare state policies influence the relationship between life course trajectories in work and family dimensions and women's subsequent mental health? I examine defamilization policies that separate welfare provision from familial ties through social security measures (Lister 2003), and their moderating role in the association between mid-life labor and family formation patterns and mental health among European women aged 50 and above. I utilize the SHARELIFE dataset spanning 14 countries, a retrospective survey executed across diverse European regions.

Studying women's mental health in Europe offers a unique lens into the broader narrative of health disparities across the life course. Europe's rich tapestry of diverse welfare state models, from the comprehensive Nordic systems to the familialistic Mediterranean ones, provides a fertile ground for understanding how different policy environments interact with life course trajectories. The continent's shared yet varied history, marked by both common cultural threads and distinct national identities, allows for a nuanced examination of how societal and policy changes influence health outcomes. Furthermore, the intricate family and work patterns that have emerged in Europe, influenced by the second demographic transition and post-materialist values, underscore the importance of understanding the specific vulnerabilities women face in this context.

Analytically, Europe's diversity is its strength. The ability to conduct comparative analyses across countries with shared policy-making structures, like the European Union, means that findings in one nation can offer insights and potential policy recommendations for another. Moreover, the availability of robust datasets, such as SHARELIFE, ensures that investigations are grounded in comprehensive and reliable data. By delving into the European context, we can glean insights not just about the health disparities women face, but also about the potential policy interventions that can address these disparities, making

the research both academically enriching and practically actionable.

In subsequent sections, I will start with a literature review, showing the primary theoretical frameworks that address the enduring impact of life course circumstances on women's later-life health. Following that, I will introduce a contemporary perspective that integrates the welfare state into health inequality research. Adopting a comparative lens, I aim to advance this research domain by adding a life course perspective to the study of health disparities. Concluding the theoretical segment, I will outline my working hypotheses. Subsequently, I will explain the data and methodologies employed to address my research question before transitioning to the findings. In conclusion, I will contextualize the results within existing literature, evaluating how they augment our current understanding of the relationship between life course events, health, and the instrumental role of the welfare state in this nexus.

## **3.1 Background**

### **3.1.1 Life course differentiation and mental health**

Work and family statuses experienced throughout the life course constitute fundamental domains in people's lives. Studies have shown that these domains impact health and well-being. Long-term labor market attachment throughout the life course leads to better mental health, while weaker attachments, such as part-time employment or staying at home, have detrimental effects (Madero-Cabib, Azar, and Pérez-Cruz 2019; Montez et al. 2015; Ross and Mirowsky 2002; Wahrendorf et al. 2013). These relationships can be explained through the accumulation of material resources, a sense of purpose, and strong social ties. Conversely, marriage and parenthood can boost people's health by providing more resilient social connections and social support in later life (Grundy and Tomassini 2010; Kravdal et al. 2012; Lacey et al. 2016; Read, Grundy, and Wolf 2011). Marital disruptions, either through divorce or widowhood, can be highly stressful life course events that diminish psychological well-being

(Liu 2012), particularly for women (Umberson, Thomeer, and Williams 2013) either because of changes in the benefits provided by marriage (Williams and Umberson 2004) or the strains in marital dissolution (Amato 2000).

However, the timing and sequence in which individuals experience these work and family statuses have varied historically. Differentiation, (de)standardization, and institutionalization are three pivotal concepts in sociological life course research. Differentiation (Brückner and Mayer 2005; Mayer 1991) describes the process by which people experience an increasing variety of statuses throughout their life courses, leading to greater variability. For instance, the shift in labor market participation from enduring tenures with a single employer or few employers to frequent changes among various employers represents a differentiation of the life course (Mertens 1998). Similarly, an increase in divorce and remarriage compared to remaining in a single marital union signifies a differentiation process (Brückner and Mayer 2005).

Institutionalization pertains to the process whereby life course stages are governed by normative, legal, or organizational rules (Brückner and Mayer 2005). Historically, welfare states recognized marriage as an institutionalized bond between a man and a woman, leaving other relationships deinstitutionalized. Over time, traditional marriage has been partially deinstitutionalized as diverse forms of unions gained normative acceptance. Standardization, meanwhile, describes the process by which specific transitions or timings become commonplace within certain populations. For instance, although traditionally seen as highly standardized, retirement patterns have become increasingly de-standardized, with people experiencing multiple retirement transitions that follow diverse paths (Calvo, Madero-Cabib, and U. Staudinger 2017).

In this study, my focus is on life course differentiation and standardization in two domains: work and family. I lean on two theoretical models to discern the relationship between differentiation in life trajectories within work and family spheres and subsequent mental health: the cumulative (dis)advantage model and the role enhancement/conflict the-

ory. The concept of cumulative advantages, introduced by Robert Merton (1968) and prevalent in stratification research, posits that beneficial circumstances at one stage in life yield further gains, leading to growing inequalities over time (DiPrete and Eirich 2006). Within this paradigm, sociological health research indicates that initial advantages or disadvantages set health trajectories that diverge as individuals age due to the compounding of those (dis)advantages. Continuous exposure to varied life situations, accrued as advantages or disadvantages in fields such as education, employment, or family ties, shapes a person's future health status (Cunningham et al. 2018; Dannefer 2003; Madero-Cabib, Undurraga, and Valenzuela 2019; Singh et al. 2017). Thus, one would anticipate that women with highly variable and unpredictable life courses would exhibit poorer mental health in later life due to accumulated stress during mid-life.

Yet, the specific work and family statuses a woman encounters throughout her life are not the sole factors to consider; the roles experienced concurrently within each dimension are also crucial. From the perspective of role enhancement theory (Ahrens and Ryff 2006; Barnett and Hyde 2001), undertaking multiple roles bolsters psychological well-being due to increased feelings of empowerment, resource availability, and emotional satisfaction (Muller and Litwin 2011). In contrast, role conflict theory (Gove 1984; Lahelma et al. 2002) suggests that expansive work-family roles lead to overwhelming stress, resulting in negative psychological implications (Tosi and Grundy 2019). For instance, a recent U.S. study by Leupp (2017) reveals that among women, the positive impact of employment on mental health across the life course is counteracted by the presence of young children. Only as children grow older does the beneficial influence of work become significant for women.

The trajectories of work-family life differentially influence mental health, whether due to the stress of conflicting roles between work and family or the rewarding experiences associated with these domains. From a life course standpoint, we must view these trajectories as accumulations of advantages or disadvantages over time. However, certain contexts can either intensify or alleviate these associations by rendering disadvantages, for example, less

harmful. A comprehensive contextual framework is essential to understand the variations in these relationships.

### 3.1.2 Bringing the welfare state into the picture

The primary objective of this study is to examine how social advantages or disadvantages, accumulated through work-family trajectories over the life course, impact the mental health of women aged 50 and above in Europe. Additionally, this study seeks to address the moderating role of the welfare state. As a central actor in providing welfare services, transfers, and well-being-related policies (Bambra and Eikemo 2008; Esping-Andersen 1990), welfare states have the capacity to alter individuals' opportunities and life trajectories in various domains, including work and family. They can also influence how these life trajectories impact health once established.

Comparative frameworks aiming to understand cross-national variations of the welfare state have primarily centered on overarching definitions. Esping-Andersen's typology (1990) in *The Worlds of Welfare Capitalism* is the most renowned. It suggests that welfare states in the developed world, including Europe, the United States, and later Japan (Esping-Andersen 1997), revolve around how they reduce market dependency for wages, stratify individuals, and determine the roles of the state, markets, and family in overall welfare provision. These policy setups lead to various forms of work and family policies, subsequently molding work and family experiences (Corna 2013).

Utilizing these typologies—and others emerging from Esping-Andersen's foundational classification—a novel research field has explored how welfare states influence the way socio-economic standings impact health (e.g., Bambra, Smith, and Pearce 2019; Espelt et al. 2008; Sacker, Worts, and McDonough 2011). The bulk of this research has centered on overarching typologies of the welfare state. For instance, studies have indicated that social-democratic welfare states lessen the harmful effects of specific old-age labor trajectories on health compared to corporatist states (Madero-Cabib, Corna, and Baumann 2019). However, I contend



that the limitation of this approach is its over-reliance on broad typologies, which obscure our understanding of which specific institutional configurations mediate the relationship between life course conditions and health.

Scholars also contend that welfare state typologies often overlook their gendered dimensions, neglecting gender's role as a form of social stratification (Bambra 2007a; Saxonberg 2013). This oversight prompted numerous scholars to develop gendered welfare state typologies focusing on 'defamilization.' Yet, the gendered facet of the welfare state remains underrepresented in comparative health inequalities research (for an example, see Uccheddu et al. 2019). Bambra (2009) emphasizes the importance of considering this gendered dimension of the welfare state. Traditional welfare state typologies fail to clarify why the consistent observation that Social Democratic welfare states minimize income-related health disparities through redistribution (Mackenbach 2012) does not necessarily apply to women.

In addition to incorporating a gendered perspective on the welfare state and focusing on specific policy domains to comprehend its role in health disparities, we should also perceive welfare states as evolving entities shaped by political and cultural dynamics (Abbott and DeViney 1992). When investigating health inequalities from an institutional and life course standpoint, a snapshot of the welfare state at a single point in time is insufficient. If there is an interplay between individual life courses and the welfare state that influences health, it is crucial to assess welfare states at distinct phases of people's lives. To thoroughly understand the impact of institutional configurations on health, we must recognize that even within a singular territory, individuals may encounter varied institutional setups throughout their life, influenced by their birth year. A comprehensive understanding demands insights into the political atmospheres of the past, not just the present policy context, to elucidate health inequalities steered by institutional and political backdrops.

I identify two main research methodologies for studying health inequalities from an institutional perspective: a small-n approach and a hierarchical large-n approach. The former contrasts a limited set of countries to discern how the relationship between social structures

and health diverges across contexts. Observed differences are hypothesized to stem from institutional variations across these contexts. For instance, Olafsdottir (2007) contrasts the U.S. with Iceland, highlighting that certain stratifications have a more pronounced negative effect on health in the U.S. than in Iceland. Her argument seeks to convince readers that these disparities are a consequence of differing institutional factors between the two nations. However, her approach does not account for how institutional structures observed in both countries in 1998 (the data's year) have evolved. For example, while she underscores that in the U.S., single parenthood correlates negatively with self-reported health, there's no such significant correlation in Iceland. She posits that the difference can be attributed to the disparity in maternity/paternity leave generosity between the two countries. Yet, the history of parental leave in Iceland is fairly recent. Comprehensive maternity leave was only introduced in 1980 and later extended to 9 months in 2000. One might then question: if maternity leave is beneficial for health, what about older generations who did not benefit from these policies? Could Iceland's observed correlation be masking this variation if we do not adopt a life course perspective?

Conversely, the hierarchical large-n approach contrasts a considerably larger set of countries, typically employing hierarchical regression models to discern how specific stratifications affect health differently across pre-defined welfare regimes. Bambra and Eikemo's work (2008) serves as a prime example, elucidating how unemployment's relationship with morbidity and mortality shifts across European policy regimes. Their findings suggest that although the correlation between unemployment and health is universally negative, its intensity varies by welfare regime. Specifically, the most pronounced disparities are observed in the Anglo-Saxon, Bismarckian (for men), and Scandinavian (for women) regimes, with the least pronounced differences evident in the Southern and Eastern (for women) systems (Bambra and Eikemo 2008, p. 96). This method's reliance on welfare state typologies presumes static institutional structures and assumes that diverse policy arenas possess similar attributes. This is a strong assumption, as it is entirely plausible for distinct policy areas to

embody divergent principles.

This study bridges the gap between political sociology and social epidemiology by: (1) evolving beyond static definitions of welfare states, and (2) shifting away from broad, ungendered interpretations of welfare policy arrangements. While typologies are instrumental in deciphering general trends of welfare state evolution, their generality can obfuscate intra-country variances across policy sectors. These sectoral differences could have distinct direct or moderating impacts on health.

Focusing on the European scenario provides an apt foundation to incorporate this dynamic, nuanced, and gendered perspective of the welfare state into life trajectory and health research. A significant advantage of cross-national life course research is its ability to elucidate how diverse institutional configurations mold individual life trajectories, potentially fostering health disparities. By presenting a deeper comprehension of these processes, my work hopes to contribute to the broader discourse on how welfare states can minimize health inequalities by curating equitable life trajectories.

### 3.1.3 Defamilization and health

Defamilization is a concept deeply intertwined with gender, work, and family. Historically, women have shouldered the responsibilities of caregiving and household tasks. In this context, (de)familization refers to measures enacted by states to enhance women's autonomy, enabling them to fully engage in the labor market. Defamilization policies aim to alleviate the care duties traditionally viewed as women's responsibilities. Thus, defamilization can be conceptualized as actions implemented by the state to harmonize work and family dynamics, decrease care burdens, and facilitate women's labor market participation, thereby lessening financial interdependence among family members (Bambra 2007a; Chau et al. 2017; Lohmann and Zagel 2016).

Given that defamilization policies alter the distribution of paid and unpaid labor and their synchronization, they hold particular significance in understanding the mechanisms

linking life course trajectories in work and family spheres to health. As previously mentioned, specific employment statuses or absences from the labor force correlate with mental health challenges. The same principle applies to various family statuses throughout the life course. For instance, how does experiencing a life course trajectory marked by hard work at home and in the labor market in a low defamilization context (with minimal support for unpaid home labor) compare to a context with substantial state support for unpaid labor? Likewise, is the experience of a life course marked by a traditional family setting and long-term labor force attachment in a context with low defamilization (indicating high levels of care dependence within families) comparable to other contexts?

Very few studies have examined the correlation between defamilization and mental health. Research endeavors that delve into the gender gap in health inequalities from a comparative lens often employ traditional welfare state typologies to assess the moderating influence of institutional frameworks on gendered health disparities. Academics have emphasized the need for investigations into the gendered facet of the welfare state to comprehend gender-specific health disparities. Furthermore, most of these studies employ a cross-sectional perspective, overlooking individuals' exposure to policy setups throughout their life courses (e.g., Bambra et al. 2009; Chung et al. 2013).

How does defamilization influence the impact of work-family life courses on mental health? Building upon the models elucidated above to comprehend associations resulting from the accumulation of advantages or disadvantages due to exposure to particular statuses throughout the life course, it is plausible to posit that defamilization policies can alter the stress levels associated with specific trajectories, thereby influencing their effects on mental health in later life. I propose that welfare states may adjust the strain associated with certain work-life trajectories in terms of the extent of stress they induce.

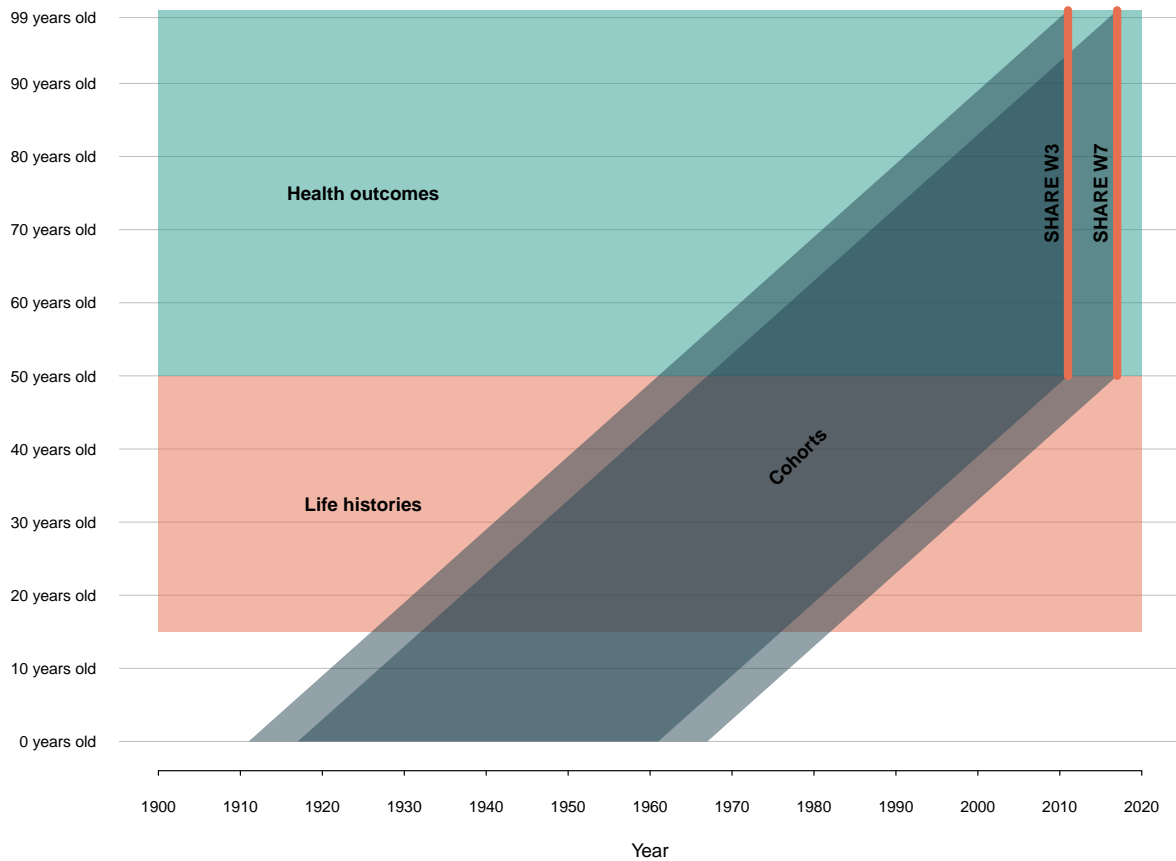
## 3.2 Methods

### 3.2.1 Data source and sample

I utilize data from the Survey of Health, Ageing, and Retirement in Europe (SHARE). SHARE is a panel survey representative of individuals aged 50 and older across multiple European countries. It encompasses a wide range of topics from economic and demographic variables to health and family matters (Schröder 2011). SHARELIFE, fielded in the third and seventh waves of the SHARE study, collects life histories, capturing employment and family formation experiences from childhood to advanced age. The data I use encompasses 14 countries (15 territories) that participated in SHARELIFE: Austria, Belgium, Czech Republic, Denmark, France, East Germany, West Germany, Greece, Ireland, Italy, Netherlands, Poland, Spain, Sweden, and Switzerland. The participants were born between 1924 and 1965 and were all aged 50 or above at the interview time.

To discern the relationship between life trajectories and depressive symptoms, I combined data from SHARELIFE with data from respondents from Waves 1, 2, 4, 5, and 6 of SHARE. This merging yielded a final sample of 22,250 women, all of whom had comprehensive life histories from ages 15 to 50 and available depressive symptom data. The structure of this data is elucidated in Figure 3.1 using a Lexis diagram. Here, the X-axis denotes the year of birth, while the Y-axis signifies age. Diagonal lines indicate lifelines, spanning from an individual's birth year to the year and age of the interview. Given that SHARELIFE gathers retrospective data, the bold red lines mark the interview period. The third and seventh waves of SHARE took place in 2011 and 2017, respectively. Each participant was observed cross-sectionally, with retrospective data that accounted for life experiences from age 15 onwards. The shaded polygon depicts cohorts of individuals aged 50 or above at the interview time. Data on employment and family life trajectories were derived from self-reports about their lives between ages 15 and 50. Any participant reporting significant health issues prior to or during their trajectories was excluded to eliminate potential

Figure 3.1: Lexis diagram: data structure



health influences on trajectory patterns (Haas 2007, 2008; Haas, Glymour, and Berkman 2011). However, considering the profound impacts of early health on later life employment trajectories and health (Case and Paxson 2011; Haas 2008; Haas, Glymour, and Berkman 2011), and on family formation (Haas, Glymour, and Berkman 2011), I consider self-reported health status a crucial covariate potentially related to both my main independent variable and depressive symptoms.

### 3.2.2 Measurements

Dependent variable: EURO-D depression symptoms scale

Approaches for studying the association between life courses and health have used various health outcomes. Mental health has rarely been the focus (Angelini, Howdon, and Mierau 2019). Nevertheless, there is literature documenting that life course circumstances can have long-term effects on mental health (Luo and Waite 2005; Tani et al. 2016). However, these studies have not considered life course stages simultaneously and in the context of policy environments. Furthermore, understanding the determinants of women’s mental health is crucial. Traditional gender roles and the integration of women into the workforce, especially for the cohorts in this study, created stressors that may influence mental health later in life.

Mental health was measured using the EURO-D score provided by SHARE. EURO-D is an instrument used to measure clinical depression (Prince et al. 1999) built to allow cross-national comparisons of depressive symptoms across European countries. The indicator is created by asking respondents whether they have experienced any of the following 12 symptoms in the past month: depression, pessimism, suicidality, guilt, sleep, interest, irritability, appetite, fatigue, concentration, enjoyment, and tearfulness. Because EURO-D is generally used in clinical settings with a threshold of three to diagnose depression, respondents were classified as depressed if they reported more than three symptoms.

#### Work-family trajectories

Participants, during their life history examination, were prompted to annually recall significant milestones, such as job-related changes and key family events. These include moving out of their parent’s home, cohabiting, marriage, childbirth, widowhood, and divorce. Leveraging this data, I crafted a life history dataset. In this, each individual is observed annually from age 15 up to their age at the time of the survey. Their recorded state remains unchanged until they indicate a change in status. Family trajectories encompass 12 potential

statuses (6 with and 6 without children):

1. Living with parents
2. Single
3. Cohabiting
4. Married
5. Divorced
6. Widowed

Employment trajectories consist of seven possible states:

1. Employed
2. Self-employed
3. Unemployed
4. Home/family work
5. Retired
6. Full-time education
7. Other

The ‘Full-time Education’ status was ascertained based on when respondents reported finishing their full-time education, inherently assuming that they were enrolled in full-time education before this period. Pertaining to employment, details of up to 20 jobs were considered to discern if a respondent was employed at a particular age. This consideration takes into account the job’s start and end dates, as well as the self-employment status. Only employment durations lasting six months or more were deemed significant.

For periods of non-employment, each hiatus was documented—whether it was before the first job, in between jobs, or after the last job. The rationale behind these gaps was classified as either being due to unemployment (whether actively job-seeking or not), home/family responsibilities, retirement, or broadly labeled as ‘other.’ The ‘other’ category encompasses reasons such as illness or disability, voluntary work, military service, and travel.

To consolidate the work history, spans of full-time education, paid employment, and



unpaid or non-working intervals were merged. On the infrequent occasions when both paid and unpaid periods coincided, the unpaid or non-working interval was prioritized, succeeded by paid employment, and finally, education.

### Country-level moderator: De(familization)

To test the moderating effect of defamilization policies, I rely on two indicators elaborated by Zagel and Van Winkle (2020). For each country, there was information available from 1924 to 2006 in 6 policy areas:

1. the availability of public early childcare starting at one year of age (yes/no),
2. the availability of public preschool childcare beginning at three years of age (yes/no),
3. the existence of old-age social pensions (yes/no),
4. the standardized duration of paid paternity leave (0-1),
5. the number of weeks of job-protected paternal leave (0-100),
6. the number of weeks of paid paternal leave.

Using PCA to produce a weighted additive index, all variables were used to generate a defamilization index. Finally, with the index built for each country year, an average for when individuals were fifteen to forty was estimated. For example, a woman born in 1940 in Italy had a defamilization exposure level calculated as the average for all values in Italy between 1955 and 1980.

### Controls

All models include controls for demographic and health-risk-related variables. For sociodemographic indicators, all models include age at the time of the interview, educational level, income, and occupation of the primary breadwinner at age ten as a proxy for childhood SES. For health-related variables, current drinking and smoking status are considered as lifestyle indicators, childhood self-rated health to control for possible health selection effects

into employment and family trajectories, and self-rated health at the time of interview for physical health. Also, economic development, measured as the GDP per capita averaged at the same years as the defamilization indices, is included at the country level.

### 3.2.3 Empirical strategy

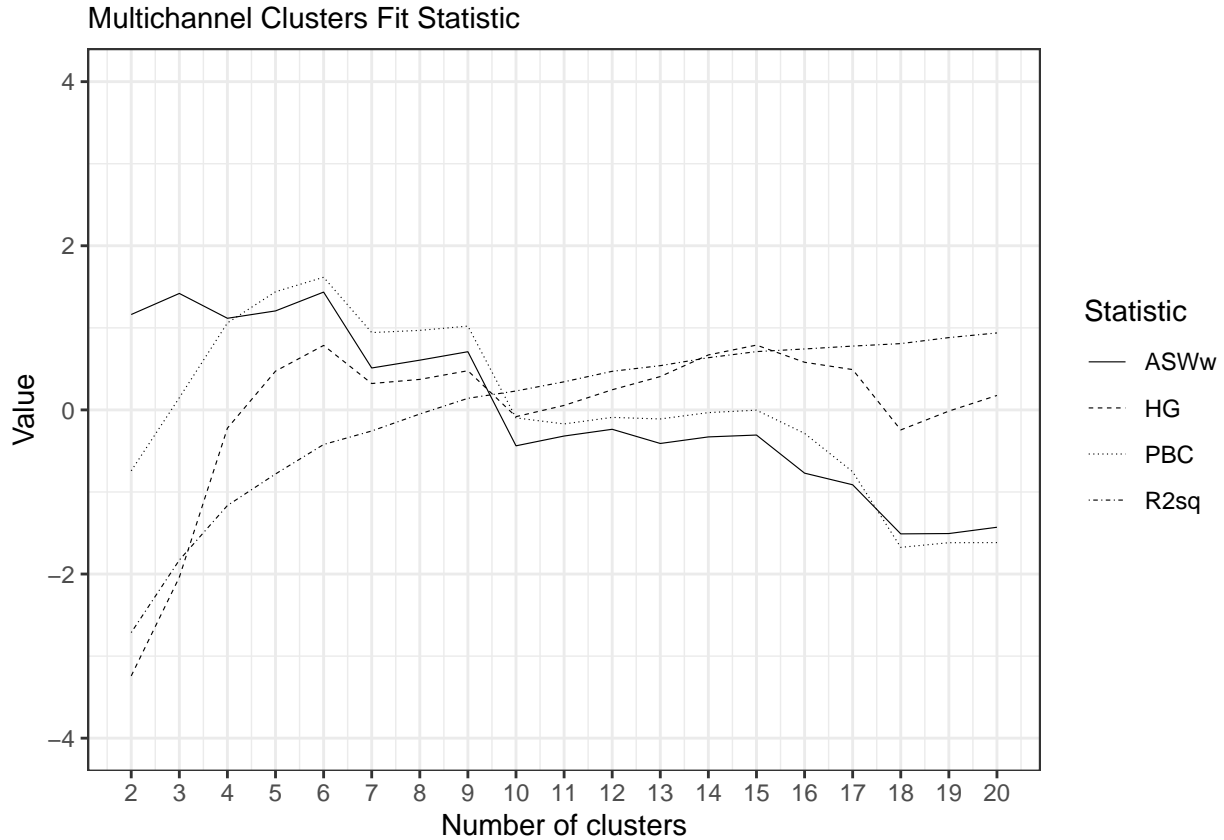
I divided my analytical technique into two parts. I first applied multichannel sequence analysis (MCSA) and cluster analysis to reconstruct simultaneous career and family formation trajectories. I then predicted the likelihood of reporting depressive symptoms using logistic regression models based on different work-family trajectory types. Moreover, I investigated the heterogeneity of the association among cohorts and defamilization index exposure levels.

I utilized cluster analysis and multichannel sequence analysis (MCSA), an expansion of standard sequence analysis (see MacIndoe and Abbott 2011), to rebuild different trajectories in the two domains of interest. Using two operations—insertion/deletion and state substitution—sequence analysis enables comparing life trajectories depending on the cost of transforming one sequence into another. The process in question is optimal matching, which permits the researcher to determine substitution costs. The results presented here are based on substitution costs determined by the inverse of the observed probability of being in each state at each age, and an insertion/deletion cost of 1.

In contrast to classical sequence analysis, which only provides computing distances between sequences in one domain, MCSA allows computing distances between individual sequences in many domains at once. As a result, individual trajectories comparisons included statuses of family formation and employment throughout time. I used the Ward algorithm to perform hierarchical agglomerative clustering after estimating the distances between all potential pairs of sequences based on the optimal matching approach for MCSA. This process enabled me to reconstruct various trajectories in both domains concurrently.

The choice of a more reliable cluster solution, which better captures the diversity of trajectory types followed by people in the work and mental health domains, was crucial

Figure 3.2: Cluster cut-off criteria



(minimizing variance in each trajectory type and maximizing between variance between trajectory types). I used Hubert’s Gamma (H.G.), Point Biserial Correlation (PBC), Average Silhouette Width (ASW), and Hubert’s C as my four selection criteria (H.C.). Given that some of these criteria have an index that varies from -1 to 1 and others from 0 to 1, I used normalized scores. A lower measure in H.C. implies a better solution, whereas a higher measure in the ASW, PBC, and H.G. indices indicates a better cluster solution (see (Studer 2013)). Using these criteria for selection (see Figure 3.2), my final solution of employment family formation trajectories considers six types.

The second set of analyses aimed to identify the relationship between work-family life histories and depressive symptoms later in life. I estimated fixed effects and logistic regression models, incorporating country- and cohort-fixed effects to control for potential confounding

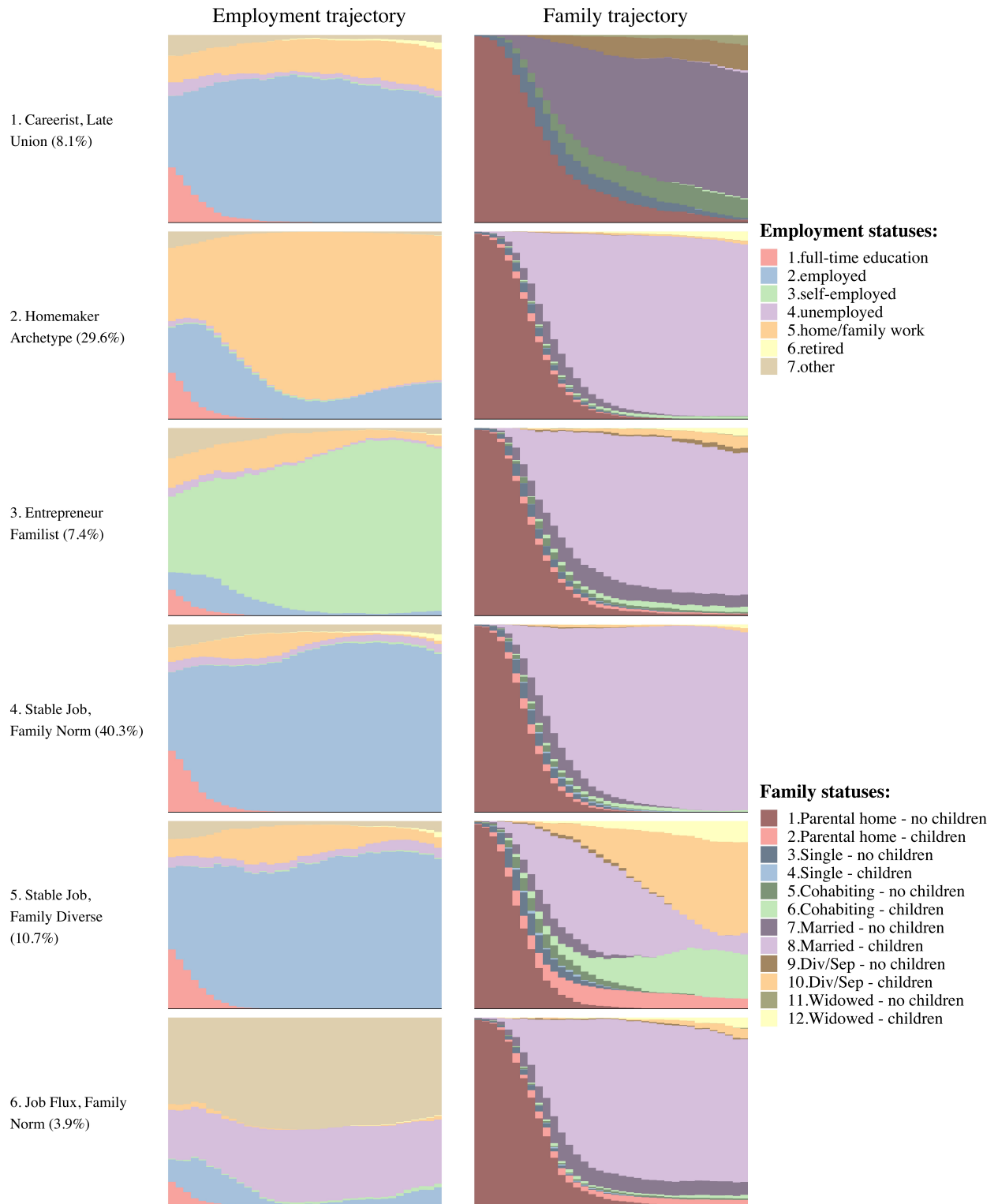
factors at these levels. Specifically, I assessed the association between the trajectory types and depressive symptoms, estimated interaction effects, and calculated average marginal effects to determine if the association of trajectory types differed across various defamilization index levels and cohorts.

### 3.3 Results

Figures 3.3 and 3.4 display the chronogram and sequence index plots for each trajectory type, respectively. The chronogram plot illustrates the percentage of people (ranging from 0 to 1) in each work and family formation status within each trajectory type at every time point from age 15 to 50. The right column of the plot presents family formation trajectories, while the left column focuses on employment trajectories. The X-axis represents the passage of time in years of age. The far-right legend itemizes the seven employment and the twelve family formation statuses necessary for reconstructing the trajectory types. The name and percentages of each trajectory type appear on the left. Figure 3.4 showcases sequence index plots. The Y-axis contains as many lines as there are individuals classified within a type, revealing the observed trajectory for each person. Each color change signifies a shift in status instead of proportions of individuals grouped by different employment and family statuses.

The first trajectory type, ‘Careerist, Late Union’, encompasses 8.1% of the sample. This type is characterized by women predominantly employed throughout the observation period, following a non-traditional family trajectory: a majority of women in this category move out of their parental homes unpartnered, subsequently cohabiting without children. Their trajectories culminate with the majority being married but childless. The ‘Homemaker Archetype’ is the second most prevalent group (29.6%), where women mainly stay out of the labor market doing home/family work, only occasionally entering the labor force as employees. Most in this trajectory depart from their parental homes to marry and soon have children. The third group, ‘Entrepreneur Familist’ (7.4%), includes women who remain attached to the labor force via full- or part-time self-employment, following a family

Figure 3.3: Chronogram plots of multichannel trajectory types from ages 15 to 60, in the work and family dimensions



N = 26,274.

trajectory akin to the second type.

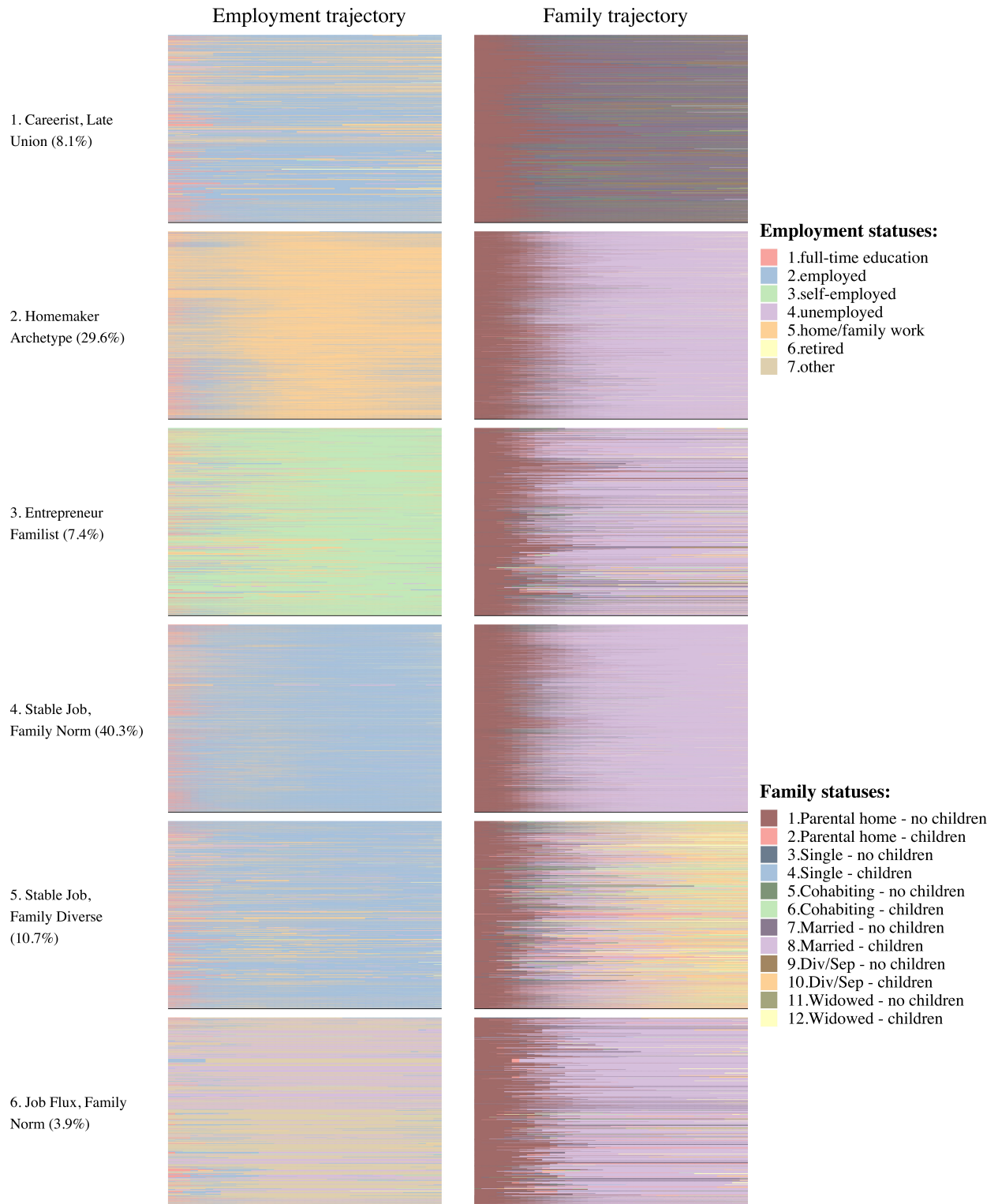
The ‘Stable Job, Family Norm’ group comprises 40% of the sample, marking it as the largest group. Women in this category demonstrate a long-term connection to the labor force through dependent employment and adopt a traditional family formation trajectory. The fifth category, ‘Stable Job, Family Diverse’, shares a similar employment trajectory but diverges greatly in family formation. Most women in this trajectory approach age 50 being either divorced or separated without children, cohabiting with children, widowed with children, or residing with children in their parental home. The final category, named ‘Job Flux, Family Norm’, proves more challenging to categorize. Individuals in this group exhibit non-traditional labor force trajectories but follow a comparatively traditional family formation path.

Figure 3.5 depicts the distribution of the trajectory types by country on the left and by cohort on the right. Variability between countries is significant. In all countries, the modal trajectory is either the ‘Homemaker Archetype’ or the ‘Stable Job, Family Norm’. Southern European nations and the Netherlands predominantly display the former type.

In contrast, countries such as Sweden, Denmark, Eastern Germany, and the Czech Republic, show a higher prevalence of the latter. There is also noteworthy variation across cohorts. Younger cohorts lean towards a higher prevalence of ‘Stable Job, Family Norm’, whereas the ‘Homemaker Archetype’ remains dominant in older cohorts. Notably, in nations and cohorts where ‘Stable Job, Family Norm’ emerges as the predominant trajectory, there also exists a significantly heightened prevalence of non-traditional family formation types.

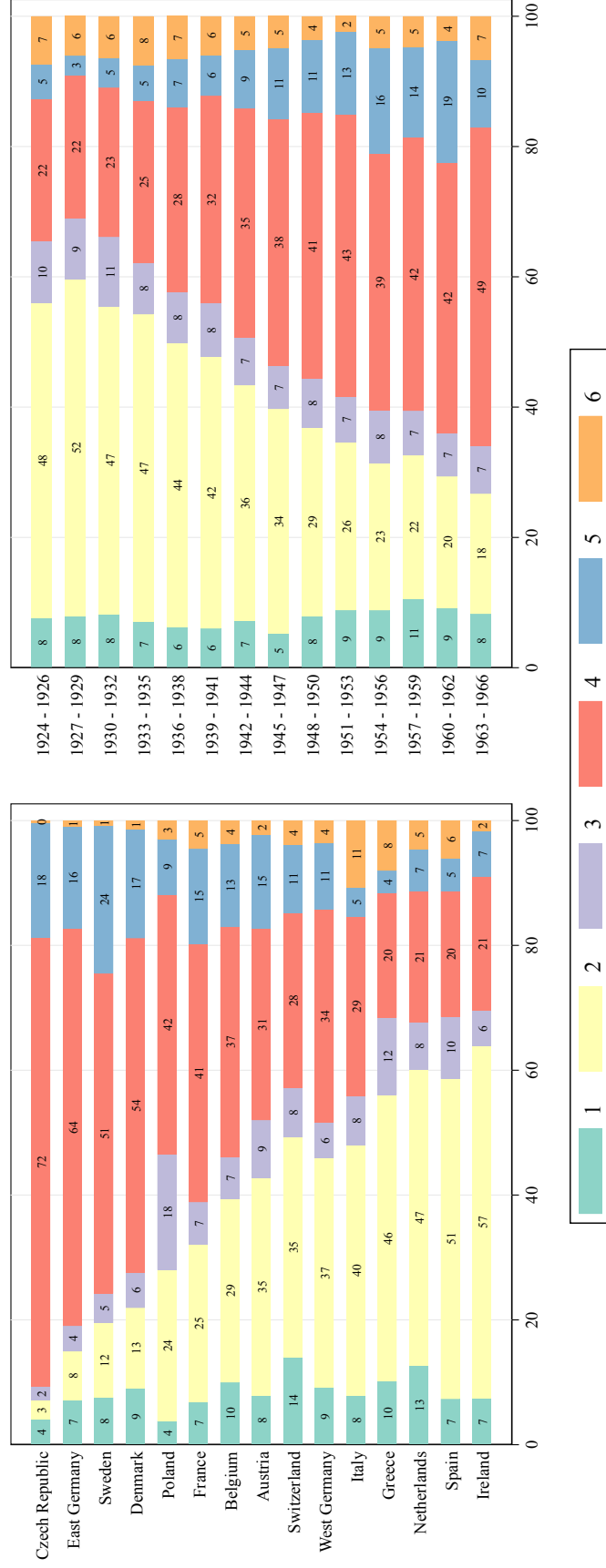
Table 3.1 details the relationship between the trajectory types and depressive symptomatology. Pertaining to life course trajectory types, the proportion of individuals reporting more than three depressive symptoms is notably lower among women who adopted either a ‘Stable Job, Family Norm’ or ‘Entrepreneur Familist’ trajectory. Conversely, the proportion of women reporting depressive symptoms in the ‘Careerist, Late Union’ category is significantly higher. Regarding defamilization, those reporting more than three depressive

Figure 3.4: Index plots of multichannel trajectory types from ages 15 to 60, in the work and family dimensions



N = 26,274.

Figure 3.5: Distribution of trajectory types across countries and cohorts



Note: Percentages are shown over the bars.

Trajectory types correspond to 1 'Careerist, Late Union'; 2 'Homemaker Archetype'; 3 'Entrepreneur Familist'; 4 'Stable Job, Family Norm'; 5 'Stable Job, Family Diverse'; 6 'Job Flux, Family Norm'.



Table 3.1: Bivariate descriptive statistics

	Non depressive	Depressive	p-value
<b>Trajectory type</b>			
Homemaker Archetype	68.17	31.83	0.000
Careerist, Late Union	66.08	33.92	
Entrepreneur Familist	70.14	29.86	
Stable Job, Family Norm	72.08	27.92	
Stable Job, Family Diverse	68.23	31.77	
Job Flux, Family Norm	62.77	37.23	
<b>Age</b>			
	61.92 (8.68)	62.66 (9.32)	0.000
<b>Educational level</b>			
Less than upper secondary	63.18	36.82	0.000
Upper secondary and vocational training	72.22	27.78	
Tertiary	77.29	22.71	
<b>Total income (in thousands)</b>			
	35.43 (49.99)	27.31 (41.36)	0.000
<b>Breadwinner occupation at age 10</b>			
White collar	74.40	25.60	0.000
Blue collar	67.83	32.17	
Military	72.16	27.84	
<b>Smokes (ref = doesn't smoke)</b>			
	0.17 (0.37)	0.19 (0.39)	0.000
<b>Drinks weekly (ref = doesn't drink weekly)</b>			
	0.42 (0.49)	0.34 (0.47)	0.000
<b>Self-rated health (1-5)</b>			
	2.73 (0.99)	3.52 (1.02)	0.000
<b>Self-rated childhood health (1-5)</b>			
	2.07 (0.98)	2.27 (1.05)	0.000
<b>Defamilization index exposure level (std)</b>			
	0.20 (1.23)	0.09 (1.13)	0.000
<b>GDP per capita exposure level (std)</b>			
	10.58 (3.94)	9.85 (4.21)	0.000
<b>N</b>	15,009	6,734	
<b>%</b>	69.03	30.97	

Note: p-values correspond to  $\chi^2$  tests for categorical variables and t-tests for continuous variables. Standard deviations are in parentheses. For categorical variables, tconditional distribution of depressive symptomatology is shown. For continuous variables, the mean of the variable for each category of depressive symptomatology is displayed.

symptoms experienced notably lower levels of defamilization policies. The observed bivariate difference approximates to about one-tenth of a standard deviation of the defamilization index distribution. All other variables maintain an expected bivariate relationship. Women indicating depressive symptoms are typically older, possess a lower education level, earn a reduced income, have a low childhood SES, and report low levels of self-assessed health during childhood and at the survey time.

For a more detailed understanding of these associations, I calculated logistic regression models. These predict the likelihood of reporting three or more depressive symptoms post-50, based on work and family life trajectory types, birth cohort, defamilization, and other variables. I also examined various interactions between life trajectories and cohort and defamilization levels. All models incorporate a country and year-of-interview fixed effect, with all standard errors clustered at the country-cohort level.

Table 3.2 displays four logistic regression models predicting the likelihood of reporting depressive symptomatology based on work and family trajectory types. Model 1 indicates that, relative to adhering to the ‘Homemaker Archetype’, women in the ‘Entrepreneur Familist’ trajectory have significantly reduced odds of reporting depressive symptoms. In contrast, those in the ‘Stable Job, Family Diverse’ have a roughly 17% higher odds of reporting such symptoms.

Model 2 in table 3.2 integrates the defamilization exposure metric and the average GDP per capita experienced by women between the ages of 15 and 40. Both variables are negatively correlated with mental health. A single standard deviation increase in the defamilization exposure index augments the likelihood of reporting depressive symptoms by 5.2 percentage points.

To assess variations across cohorts in the link between trajectory types and mental health, model 3 incorporates an interaction term between trajectory types and cohorts. The outcomes of these models appear in Figure 3.6a, where only statistically significant interactions are shown as average marginal effects. Results suggest that the positive relationship

Table 3.2: Logistic regression models over the probability of reporting depressive symptomatology for work and family trajectory types

	Model 1		Model 2		Model 3		Model 4	
	OR	SE	OR	SE	OR	SE	OR	SE
<b>Trajectory type (ref = Homemaker Archetype)</b>								
Careerist, Late Union	1.047	(0.103)	1.042	(0.102)	0.512***	(0.119)	1.118	(0.116)
Entrepreneur Familist	0.790**	(0.081)	0.781**	(0.080)	1.112	(0.280)	0.750***	(0.083)
Stable Job, Family Norm	0.975	(0.065)	0.969	(0.064)	0.886	(0.164)	1.000	(0.077)
Stable Job, Family Diverse	1.172*	(0.106)	1.158	(0.104)	0.804	(0.190)	1.196*	(0.118)
Job Flux, Family Norm	1.053	(0.114)	1.049	(0.113)	0.923	(0.253)	1.094	(0.143)
<b>Cohort</b>	1.100	(0.090)	1.070	(0.086)	1.077	(0.087)	1.075	(0.086)
<b>Age</b>	1.021	(0.027)	1.045	(0.030)	1.031	(0.029)	1.045	(0.030)
<b>Educational level (ref = less than upper secondary)</b>								
Upper secondary and vocational training	0.897*	(0.058)	0.902	(0.059)	0.896*	(0.058)	0.899	(0.058)
Tertiary	0.868*	(0.066)	0.861**	(0.066)	0.857**	(0.064)	0.854**	(0.064)
	0.953***	(0.014)	0.952***	(0.014)	0.954***	(0.013)	0.952***	(0.014)
<b>Total income (logged)</b>								
<b>Breadwinner occupation at age 10 (ref = white collar)</b>								
Blue collar	0.968	(0.062)	0.967	(0.062)	0.965	(0.062)	0.965	(0.062)
Military	0.747	(0.173)	0.753	(0.172)	0.747	(0.171)	0.749	(0.172)
<b>Smokes (ref = doesn't smoke)</b>	1.084	(0.079)	1.082	(0.080)	1.090	(0.081)	1.087	(0.081)
<b>Drinks weekly (ref = doesn't drink weekly)</b>	1.042	(0.061)	1.042	(0.061)	1.040	(0.060)	1.041	(0.060)
<b>Self-rated health (1-5)</b>	2.158***	(0.082)	2.153***	(0.082)	2.157***	(0.083)	2.154***	(0.082)
<b>Self-rated childhood health (1-5)</b>	1.082***	(0.024)	1.088***	(0.024)	1.087***	(0.025)	1.090***	(0.025)
<b>Defamilization index average exposure</b>								
<b>GDP per capita average exposure</b>								
<b>Trajectory type * cohort</b>								
Long-term attachment. Late marriage, no children			1.069**	(0.034)	1.049	(0.035)	1.070**	(0.034)
Long-term self-employment. Traditional family					1.093***	(0.030)		
Long-term attachment. Traditional family					0.955	(0.031)		
Long-term attachment. Non-traditional family					1.013	(0.024)		
Unemployed/other. Traditional family					1.044	(0.029)		
Unemployed/other. Non-traditional family					1.019	(0.034)		
<b>Trajectory type * defamilization</b>								
Long-term attachment. Late marriage, no children							1.376**	(0.179)
Long-term self-employment. Traditional family							0.794	(0.116)
Long-term attachment. Traditional family							1.128	(0.111)
Long-term attachment. Non-traditional family							1.108	(0.124)
Unemployed/other. Traditional family							1.103	(0.209)
<b>Constant</b>	0.008**	(0.017)	0.001***	(0.003)	0.003**	(0.007)	0.001***	(0.003)
<b>Pseudo R<sup>2</sup></b>	0.1200		0.1214		0.1219		0.1225	
<b>Observations</b>					22,250			

Standard errors are clustered at the country-cohort level. All models include country and year of interview fixed effects. \*\*\* p<0.01, \*\* p<0.05, \* p<0.1

between the ‘Stable Job, Family Diverse’ trajectory and depressive symptomatology only exists for older cohorts. For the youngest cohort, the positive effect dissipates, and for those in the middle cohort, the relationship turns negative.

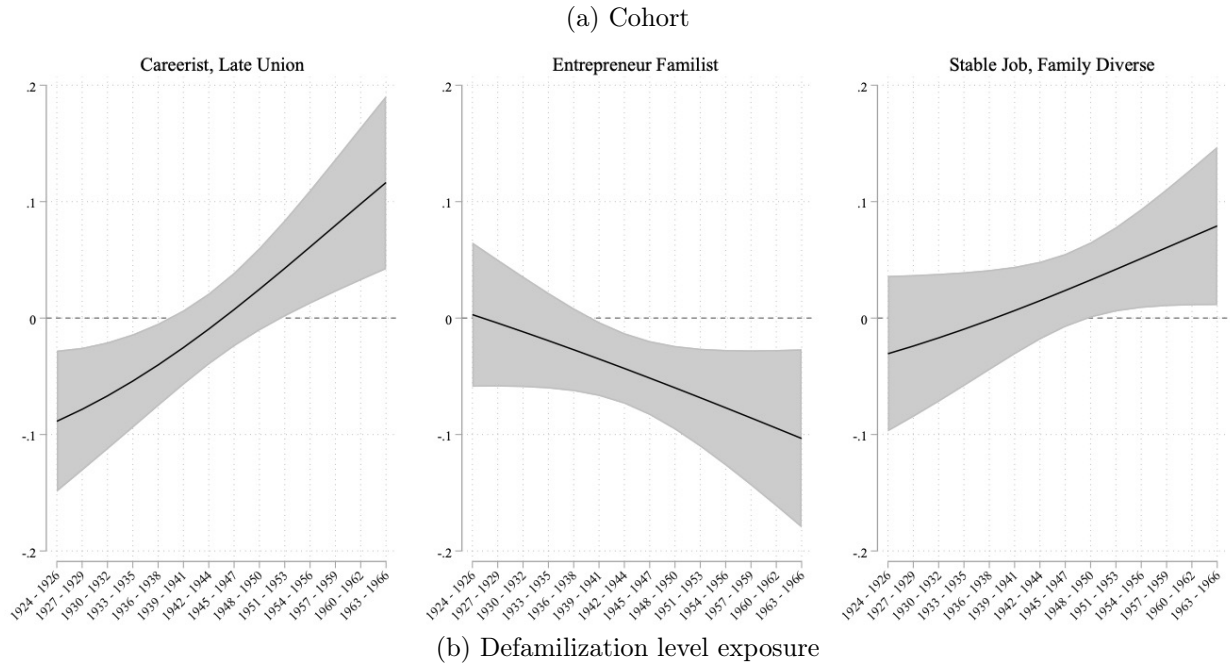
The final model, Model 4, evaluates the interaction between defamilization exposure and trajectory types and its association with mental health. The results from this model are portrayed in Figure 3.6b. The interaction is significant for the ‘Careerist, Late Union’ and the ‘Entrepreneur Familist’ trajectory types. For women following the former trajectory, at lower levels of defamilization, there is no difference in mental health outcomes relative to the ‘Homemaker Archetype’. However, at higher levels of defamilization, there is a significantly higher probability of reporting three or more depressive symptoms among these women. With regard to the ‘Entrepreneur Familist’ trajectory, there is also no significant difference relative to the reference trajectory at low levels of defamilization, but at higher levels, women following this trajectory report lower probabilities of depressive symptomatology.

### 3.4 Discussion

The intricate interplay between work, family, and mental health has long been a subject of profound interest among researchers. European women, with their multifaceted experiences across varied life trajectories in a continent in flux, offer a rich lens for this exploration (Cohen and Manning 2010). This empirical study endeavored to map the journeys of women born between 1924 and 1965 across 14 European countries. The primary objective was to decipher the nuanced relationship between their work-family trajectories and mental well-being.

Drawing from deep-rooted life course perspectives and institutional theories, this study adds to the literature by seeking to understand how defamilization policies interface with life trajectories, ultimately influencing women’s mental health outcomes. Furthermore, it plumbs the depths of generational variations, probing how diverse birth cohorts might uniquely navigate this relationship. As the revelations of this study emerge, they bear implications for both the scientific community and policymakers, illuminating avenues for bolstering support

Figure 3.6: Average marginal effect of selected work-family trajectory types on the probability of women reporting three or more depressive symptoms by birth cohort and defamilization level exposure



Note: 95% confidence intervals are shown in grey. Average marginal effects are relative to following a 'Homemaker Archetype' trajectory type. Defamilization levels exposure values are standardized.

mechanisms that cater to women’s mental health and holistic well-being.

The results of this study find resonance with the life course perspective, which consistently underscores the intricate dance between individual trajectories, societal structures, and overarching historical contexts (Liefbroer 1999). By seamlessly weaving the temporal fabric of work and family trajectories, this study eschews simplistic classifications in favor of a more granulated understanding of their association with mental health outcomes. This perspective argues that individuals’ lives are interwoven, suggesting that happenings in one domain can ripple into far-reaching consequences for others (Cornwell, Laumann, and Schumm 2008). Such a perspective finds validation in this study’s findings. The data revealed a notable shift in the prevalence of certain work-family trajectories across cohorts, with implications for mental well-being.

The nexus between life course events and health outcomes, particularly the indispensable role of social roles, familial ties, and work engagements, has been well-documented (Grundy, Read, and Väisänen 2020; Repetti, Taylor, and Seeman 2002; Zella and Harper 2020; Simon and Barrett 2010). The cumulative advantage/disadvantage theory further theorizes that an accumulation of life events, be they beneficial or detrimental, over one’s life can cast significant shadows over mental well-being (Kaplan, Shema, and Leite 2008). This study elucidates such pathways, highlighting that trajectories like the ‘Stable Job, Family Diverse’ can be accompanied by heightened depressive symptoms, hinting at the stresses of non-conventional family structures and the challenges of harmonizing work and family.

On the other side of the spectrum, trajectories like ‘Stable Job, Family Norm’ and ‘Entrepreneur Familist’ are associated with reduced depressive symptoms. These results champion the protective embrace of stable employment and conventional families, especially in societal contexts that are predisposed to these structures (Bracke, Christiaens, and Wauterickx 2008). Such findings spotlight the need to account for the cumulative weight of these trajectories on mental well-being and how institutional structures might foster certain forms of life trajectories that if not followed, can be detrimental for individual well-being.

Furthermore, this study champions the institutional approach (Beckfield et al. 2015), plumbing the depths of how defamilization policies moderate the association between work-family dynamics and mental health. Traditional welfare state typologies have often been the cornerstone of gender health disparity research (Bambra, Smith, and Pearce 2019; Espelt et al. 2008; Sacker, Worts, and McDonough 2011; Madero-Cabib, Corna, and Baumann 2019). However, this study goes beyond traditional typologies, shedding light on the intricate nuances of defamilization policies and their correlation with women’s mental health. While these policies have often been lauded as progressive, their relationship with mental well-being appears to be more textured and, crucially, dependent on broader societal and cultural milieus (Bambra 2007b).

Birth cohorts play a pivotal role in this narrative. Their influence in mapping the relationship between work-family dynamics and mental health is undeniable, with this study showcasing that certain trajectory types associate with mental health differently across these cohorts. Such associations are potentially sculpted by evolving societal standards, fluctuating economic backdrops, and the ebb and flow of policy environments (Parkinson et al. 2018; Pampel 2011).

To disentangle the relationship between work, family trajectories, and mental well-being, one can lean on role enhancement and role conflict theories as suggested in the front-end of this chapter. The former theory, which posits a harmonious synergy between work and family roles, finds echoes in the study’s findings. The findings indicate that trajectories marked by a harmonious work-family balance align with the theory, showcasing reduced depressive symptoms. In stark contrast, role conflict theory’s postulations on the tensions arising from conflicting work and family demands find validation in trajectories like the ‘Stable Job, Family Diverse’, which is marked by heightened depressive symptoms. Therefore, findings suggest that the work-family conflict is dependent on the form of the work-family trajectories themselves, where uninstitutionalized forms create a more difficult balance relative to institutionalized ones.

Synthesizing these theories with the life course perspective and institutional theories offers a rich tapestry of understanding. The study emphasizes the necessity of nuanced policy considerations, given the associations and impacts highlighted. The life course perspective, with its nuanced lens, is invaluable for policymakers charting the course for gender equity (Bambra 2007a).

This study, while comprehensive in its approach, is not without limitations. The focus on 14 European countries, though extensive, does not represent all cultural and policy nuances within the continent. Additionally, the period of birth ranging from 1924 to 1965 offers a rich historical overview but might not fully encapsulate more recent generational shifts. The reliance on self-reported data for mental well-being also carries inherent biases, as individual perceptions of mental health can vary and may not always align with clinical assessments (Spitzer and Weber 2019). The cross-sectional nature of the analysis may limit the ability to infer causality between work-family trajectories and mental health outcomes. Furthermore, while this study examines the relationship between defamilization policies and women's mental health, there may be other unexamined policies or societal factors at play that could influence the observed outcomes. Future research should aim to address these limitations, potentially integrating longitudinal designs and expanding the scope of countries and cohorts studied.

Future studies have fertile grounds to further delve into the mechanisms underpinning the relationship between work-family trajectories and mental health (Zhou et al. 2018; Carvalho et al. 2018). This would entail a meticulous exploration of stressors and protective mechanisms. The imperative to expand research horizons to diverse populations and younger cohorts also emerges, promising richer insights into the dynamic life course of work, family, and mental health. Crucially, cross-cultural and cross-national inquiries with a larger number of countries and/or cohorts can deepen our understanding of the cultural frameworks that shape these dynamics.

Additionally, examining other policy contexts and institutional settings can provide



deeper insights into the welfare state's influence on women's mental health outcomes (Bambra 2007a) and their moderating role in the relationship between work/family and mental health. It is important to consider facets of social policies beyond just defamilization, such as labor market or health policies, and understand their interplay. While social policies often reflect citizens' preferences to some extent, it is also valuable to explore how the relationship between work-family life trajectories and mental health changes across cultural contexts. This is particularly pertinent in places with, for example, different attitudes towards gender equality and family formation but similar policy backgrounds. Policy might partly reflect cultural dispositions, but there is a residual left unexplained by it (Perlman and Gleason 2007). Once again, Europe stands out as a significant setting for such analysis, allowing to add another layer of complexity to the life course institutional approach to the study of health disparities: culture.

In conclusion, this study unravels the complexities that interlace work, family, and mental health among European women. Through its life course lens, it offers nuanced insights into the relationship between work-family dynamics, defamilization policies, and depressive symptoms. As such, it beckons policymakers and researchers to march forward, informed and inspired, towards a Europe where gender equity isn't just an ideal, but a lived reality.

## CHAPTER 4

# RETIREMENT PATTERNS, LATIN AMERICAN MIGRATION, AND HEALTH LATER IN LIFE

In the intricate tapestry of society, Latin American immigrants trace a narrative as compelling as it is complex. As an important demographic group transitioning from hard work to retirement, their journey depicts a trajectory that reflects individual resilience and provides a snapshot of a nation adapting to its increasing diversity (Alba and Maggio 2022). The present study explores labor force trajectories with a focus on Latin American immigrants, highlighting their retirement patterns and their health implications as they age, especially between the ages of 60 and 70. I use data from the United States Health and Retirement Study (HRS), employing sequence analysis to provide deeper insights (Studer 2013; Juster and Suzman 1995).

Retirement, characterized by a mix of opportunities and challenges, affects various demographic groups in unique ways (Henning et al. 2021; Barnett, van Sluijs, and Ogilvie 2012). For immigrants, notably those from Latin America, retirement occurs under specific circumstances that might influence their health outcomes (Kim and Moen 2002; Scommegna 2016). This study delves into this domain, aiming to enhance our understanding of these transitions (Radl 2013; Flippen and Tienda 2000; Calvo, Madero-Cabib, and U. M. Staudinger 2018).

The Latin American immigrant group is diverse, with variations in education levels, income brackets, and healthcare access (Massey and Pren 2012; Seicean et al. 2011). Many have worked in physically demanding jobs, frequently without strong occupational safety and health measures (Giuntella et al. 2019; Zavodny 2015). Such conditions, along with other factors, may influence their retirement patterns and affect their health in subsequent years. Comprehensive studies on this topic are limited, signaling a need for more scholarly investigation.

The decision to retire is complex and influenced by numerous factors including financial

security, family responsibilities, and health condition (Beehr 2014). Specifically for the foreign-born, being immigrants plays a significant role in retirement decisions (Lopez and Slavov 2020). Thus, examining retirement patterns among Latin American immigrants is pivotal for addressing their health and welfare needs in later life.

Utilizing a sequence analysis approach, this study probes into the retirement patterns of Latin American immigrants in the United States. By showcasing complete trajectories rather than separate states or single transitions, this method offers a holistic understanding of these patterns and their potential health consequences.

The HRS data forms a solid base for this inquiry, giving a comprehensive view on aging, retirement, and health among U.S. adults over 50. It facilitates the scrutiny of different facets of retirement and health outcomes for Latin American immigrants.

Although prior research has drawn connections between retirement and health, these relationships can differ based on an individual's socioeconomic status, pre-retirement health, and the nature of retirement (Pedersen, Hansen, and Elmoose-Østerlund 2021; Calvo, Sarkisian, and Tamborini 2013; Wang et al. 2019). By focusing on Latin American immigrants, this study aims to highlight these intersections between ethnicity, immigration, retirement, and health (Liu and Wang 2022; Bound et al. 1999; Cahill, Giandrea, and Quinn 2015).

Ultimately, I seek to uncover the retirement patterns of Latin American immigrants and understand the associations of these patterns with health in later years. This pursuit is increasingly relevant with the rise in life expectancy and has potential consequences for policy recommendations concerning healthcare and retirement planning for this demographic.

As the U.S. becomes more diverse and the senior population grows, such research becomes more relevant. Current social policies and retirement strategies might not fully address the distinct experiences of Latin American immigrants, potentially leading to health outcome disparities. Through this study, I aim to shed light on these disparities, pinpoint their origins, and provide insight for more inclusive and efficient policies.

Lastly, I hope to enrich the broader dialogue on the sociology of aging and retirement.

Dominant literature often sidelines the unique experiences of immigrants. By investigating the retirement patterns of Latin American immigrants, this study seeks to introduce novel viewpoints and insights. This research emphasizes the importance of understanding the immigrant experience concerning retirement and health.

## 4.1 Background

To understand the retirement patterns and associated health outcomes of Latin American immigrants in the United States, it is essential to consider the various factors influencing this group. This Background section provides an overview of these determinants. First, I will discuss the demographics of Latin American immigrants, examining their socio-economic profiles and career paths, which lead to distinct retirement patterns. Next, I will address the factors influencing their retirement decisions, including financial stability, health status, and sociocultural factors related to their immigrant experience. Lastly, I will discuss the health outcomes associated with retirement for this group, both immediate and long-term. This review will serve as the foundation for the subsequent analysis and will provide insights into the retirement experiences of Latin American immigrants in the United States.

### 4.1.1 Demographics and retirement patterns among Latin American immigrants

An estimated 20 million Latin American immigrants, mainly from Mexico and various Central and South American countries, have a pronounced impact on the socio-cultural and economic fabric of the United States (Nadeem 2022). Their presence notably affects the labor force, the pension system, and, in turn, retirement patterns.

Latin American immigrants span a broad economic spectrum. Immigrants from Mexico and Central American countries often find themselves negotiating labor market hurdles, populating lower income strata (Bohon 2005). In contrast, immigrants hailing from nations

such as Argentina, Brazil, and Chile tend to secure positions within middle- and high-income brackets, riding on the wave of higher educational accomplishments (Guzman, Thomson, and Ryberg 2021).

A closer look at the occupational histories of Latin American immigrants uncovers their economic integration into the United States. A significant share finds themselves entangled in physically laborious roles within sectors like agriculture, construction, and maintenance. These industries often proffer lower wages and confine opportunities for upward mobility (Zavodny 2015). Despite this, a substantial proportion ventures into professional occupations, particularly those with higher levels of education (Villarreal and Tamborini 2018).

The strenuous work conditions that many Latin American immigrants endure cast a profound influence on their retirement choices and timings (Johnson, Mudrazija, and Wang 2017). These taxing jobs often fast-track health deterioration (Shai 2018), potentially triggering early retirement, extended work breaks, or disability. Alongside, elements such as social support availability (Shin et al. 2020), healthcare accessibility (König et al. 2021), and language barriers can shape the retirement decision-making process. Conversely, those positioned in professional occupations with superior incomes and favorable working conditions may trace a different trajectory, aligning more with traditional retirement norms.

Upon evaluating retirement patterns among Latin American immigrants, a few trends become apparent. A majority tend to retire later than the average U.S. retirement age, driven by economic demands and lesser accumulated wealth (Johnson, Mudrazija, and Wang 2017). Many persist in their working roles post-retirement, either to augment pension income or to preserve social networks and a sense of purpose. However, these patterns are not omnipresent across the entire Latin American immigrant community. Higher educated immigrants and those in professional roles frequently exhibit retirement patterns echoing those of the general U.S. population.

Drawing comparisons between the retirement patterns of Latin American immigrants and other U.S. demographics brings forth several notable distinctions. Latin American im-

migrants typically retire later than the broader U.S. population (Lopez and Slavov 2020), often propelled by economic necessity stemming from lesser lifetime earnings and savings. A larger fraction of Latin American immigrants is observed to maintain work engagements post-retirement, a pattern less prevalent among the native-born population (Aguila, Lee, and Wong 2023). Additionally, Latin American immigrants commonly have less access to employer-backed retirement plans or other forms of retirement savings compared to immigrants from Asia and Europe (Heim, Lurie, and Ramnath 2012; Ayón et al. 2023), who typically possess higher education levels and professional roles (Abdul-Malak and Wang 2016).

Such disparities illuminate the intricate interweaving of socioeconomic variables that sculpt retirement patterns, uncovering the specific challenges Latin American immigrants encounter as they traverse the economic terrain of retirement in the United States.

#### 4.1.2 Determinants of retirement decisions among Latin American immigrants

Retirement decisions among Latin American immigrants are influenced by a combination of socio-economic, cultural, and health-related variables. Each factor has its unique significance, but their collective impact shapes the overall retirement perspective. This subsection examines these determinants, focusing on the role of financial circumstances, healthcare access, familial obligations, work conditions, linguistic proficiency, discrimination experiences, and immigration status.

Financial circumstances are pivotal in shaping retirement decisions. Factors such as personal savings, pension benefits, and eligibility for social security benefits all come into play. Latin American immigrants frequently engage in low-wage, labor-intensive jobs (Visser and Meléndez 2015; Zavodny 2014), yielding limited retirement benefits (Rabinovich, Peterson, and Smith 2017) and sparse opportunities for accumulating substantial savings (Torres, Munoz, and Becerril 2016). Even those with pensions typically receive limited benefits

due to lower lifetime earnings. Coupled with the hurdles of social security eligibility, often intensified by incomplete work histories or undocumented status in the U.S (Rabinovich, Peterson, and Smith 2017), these factors create a financial scenario that often extends work life beyond traditional retirement age.

In addition to these financial factors, familial obligations form another determinant of retirement decisions. Reflective of the strong emphasis on family responsibility in Latin American societies, immigrants often financially support extended family members (Gubernskaya and Tang 2017). This additional financial burden can further curtail retirement savings and extend the work life (Lopez and Slavov 2020).

The physical conditions of employment and individuals' health statuses are also potent influencers of retirement decisions. The physically demanding nature of work often leads to premature health issues (Moyce and Schenker 2017), triggering early retirement (Brzoska and Razum 2015). However, early retirement can strain financial resources, particularly when affordable healthcare or disability benefits are limited (Schofield et al. 2012).

Healthcare accessibility forms a pivotal piece of this retirement decision puzzle. Limited healthcare access due to lack of employer-sponsored insurance is a common issue among immigrants in low-wage sectors (Chi and Handcock 2014). The resultant healthcare challenges often extend working life to maintain health benefits or cover medical costs. On the flip side, access to comprehensive healthcare can facilitate traditional retirement timelines (Rogowski and Karoly 2000).

Language proficiency plays a considerable role in shaping retirement decisions. English proficiency directly influences employment prospects, wage potential, and retirement savings. Limited English proficiency often leads to low-paying jobs with meagre retirement benefits (Gelatt 2020). This language barrier also hampers access to retirement planning resources (Rostamkalaei and Riding 2020), shapes social networks (Diwan 2008), and impacts community engagement (Wray-Lake et al. 2015), cumulatively shaping retirement decision-making processes.

Discrimination experiences, whether perceived or objectively measured, add another layer to this decision-making process. Discrimination can inhibit lifetime earnings and hinder retirement savings accumulation, potentially delaying retirement (Tamborini and Kim 2020). Furthermore, it can restrict access to retirement resources, influencing retirement attitudes and feasibility (Zaniboni 2015).

Finally, immigration status holds profound implications for retirement decisions among Latin American immigrants. Ranging from citizenship to green cards and undocumented status, each carries its unique set of opportunities and challenges. Documented immigrants generally have access to more stable employment (Kreisberg 2019), consistent social security benefits, and potentially employer-sponsored retirement plans. In contrast, undocumented immigrants often grapple with job insecurity (Kreisberg 2019; Hall and Greenman 2015), leading to limited savings and access to social security benefits (Ayón et al. 2023). The complexity extends to public resource access, where certain statuses create barriers (Masciale et al. 2021), adding to the challenges in retirement planning.

In conclusion, comprehending retirement decisions among Latin American immigrants means understanding a multitude of overlapping factors. Each of these factors, with their individual importance and interconnections, determines the intricate decisions immigrants face regarding retirement.

#### 4.1.3 Health implications of retirement among Latin American immigrants

Understanding the health consequences associated with retirement among Latin American immigrants necessitates a detailed analysis of variables such as healthcare accessibility, socio-economic status, and pre-retirement employment conditions. This section unravels the complex relationship between retirement and health for this demographic.

The transition from employment to retirement often catalyzes diverse health effects (van den Bogaard, Henkens, and Kalmijn 2016; Fé and Hollingsworth 2016; Segel-Karpas, Ayalon, and Lachman 2018; Rohwedder 2006; Hill and Weston 2019). These effects span a



wide spectrum, from improved physical health due to relief from strenuous jobs to a decline in well-being because of reduced physical activity and the onset of feelings such as social isolation and a loss of purpose.

For Latin American immigrants, retirement signifies substantial shifts in physical and mental health states. Reductions in regular labor can spur issues like weight gain and declining physical health (Nooyens et al. 2005). Simultaneously, mental health outcomes can fluctuate from stress alleviation (Drentea 2002; Eibich 2015) to heightened risks of conditions like depression or anxiety due to feelings of isolation or purposelessness (Latif 2013).

These initial health changes may ultimately give rise to long-term health consequences. Reduced physical activity or unfavorable dietary changes could potentially increase the risk of obesity (Godard 2016), cardiovascular diseases (Bamia, Trichopoulou, and Trichopoulos 2007), and other chronic conditions (Behncke 2012). Over time, the initial sense of relief can evolve into depression or anxiety (Latif 2013). Moreover, inadequate healthcare resulting from financial constraints or lack of insurance can lead to poor disease management or delayed diagnoses (Baker et al. 2001).

Access to healthcare forms a crucial component in shaping these health outcomes. While some retirees successfully manage health issues with proper healthcare access, Latin American immigrants often grapple with limited access due to factors like costly private insurance, limited knowledge about healthcare systems, and fears related to undocumented status (Page-Reeves et al. 2013).

Compared to other U.S. populations, Latin American immigrants frequently show higher rates of chronic diseases like diabetes and cardiovascular disease after retirement (Johnson, Mudrazija, and Wang 2016). This disparity, primarily attributable to changes in lifestyle, work-related stress, and healthcare access barriers (Garcia et al. 2017), contrasts with the more favorable health outcomes and better healthcare access observed in other immigrant retirees and non-Latine Whites. Mental health outcomes, however, demonstrate variability across all groups, depending on social support and financial stability (Sadule-Rios

2012).

The observed health outcome disparities among Latin American immigrants are shaped by a blend of factors, including healthcare access, socio-economic conditions, immigration status, and language proficiency. Conditions such as low lifetime earnings, limited savings, and high-stress pre-retirement employment can exacerbate these health disparities by influencing factors like affordability of care, housing quality, and diet quality.

## 4.2 Current Study

The present study advances a theoretical framework emphasizing life course differentiation and destandardization, accommodating stratifying social structures such as race, ethnicity, gender, and notably, immigration status (Levy and Bühlmann 2016). Life course differentiation and destandardization represent the growing diversity and variability in life trajectories, including retirement (Brückner and Mayer 2005; Fasang 2009; Fasang 2012; Calvo, Madero-Cabib, and U. M. Staudinger 2018). These are fostered by shifts in socio-economic structures, individual agency, and evolving societal norms (Settersten and Gannon 2005).

However, these trajectories are not randomly distributed across the population. Instead, they mirror existing social hierarchies and inequalities, reflecting the opportunities and constraints individuals encounter throughout their life course (O’Rand 2006). Traditional stratifiers such as race, ethnicity, socio-economic status, and gender carry their unique set of norms, expectations, and systemic biases that impact the timing, sequence, and nature of pivotal life transitions, including retirement (Lareau 2011; Bowles and Gintis 2011; MacLeod 2018; Linton 1942).

Within this study, I turn to immigration status to deepen the understanding of retirement patterns’ complexity and heterogeneity. Immigration status, as demonstrated by Latin American immigrants in the U.S., can significantly shape life course trajectories. Migration experiences, including adaptation to a new socio-cultural environment, can alter life course timelines, influence economic opportunities, and mold access to social and healthcare

services. It can also create unique stressors that can have profound effects on retirement.

Drawing from the above context, I propose that Latin American immigrants face unique challenges which significantly shape their life course trajectories, and could likely result in a higher heterogeneity in their retirement patterns (H1). Given the multifaceted impact of retirement transitions on health, I hypothesize that these diverse retirement patterns will be associated with varying health outcomes in later life (H2).

Further, these challenges faced by Latin American immigrants, such as lower lifetime earnings and limited access to healthcare, might make them more susceptible to adverse health outcomes post-retirement. Hence, I also hypothesize that Latin American immigrants will be overrepresented in retirement clusters linked to poorer health outcomes (H3).

Incorporating a socio-structural framework (Levy and Bühlmann 2016), it becomes apparent that racial and ethnic inequalities in health persist. Therefore, I anticipate observing disparities in health outcomes between Whites, Blacks, U.S-born Latines, and Latin American immigrants, even within similar retirement patterns (Denton and Walters 1999; Rutledge et al. 2018) (H4).

In order to put this theoretical framework into practice, I closely examine retirement patterns among Latin American immigrants in the U.S. My goal is to identify distinct patterns within and across different racial, ethnic, and immigration status groups. I will use these identified retirement clusters as predictors when analyzing various health outcomes.

Essentially, I am not only examining retirement patterns and related health outcomes among Latin American immigrants but also investigating how immigration status, as a social stratifier, shapes the landscape of life courses. This approach enriches our understanding of destandardized life courses in a multicultural society.

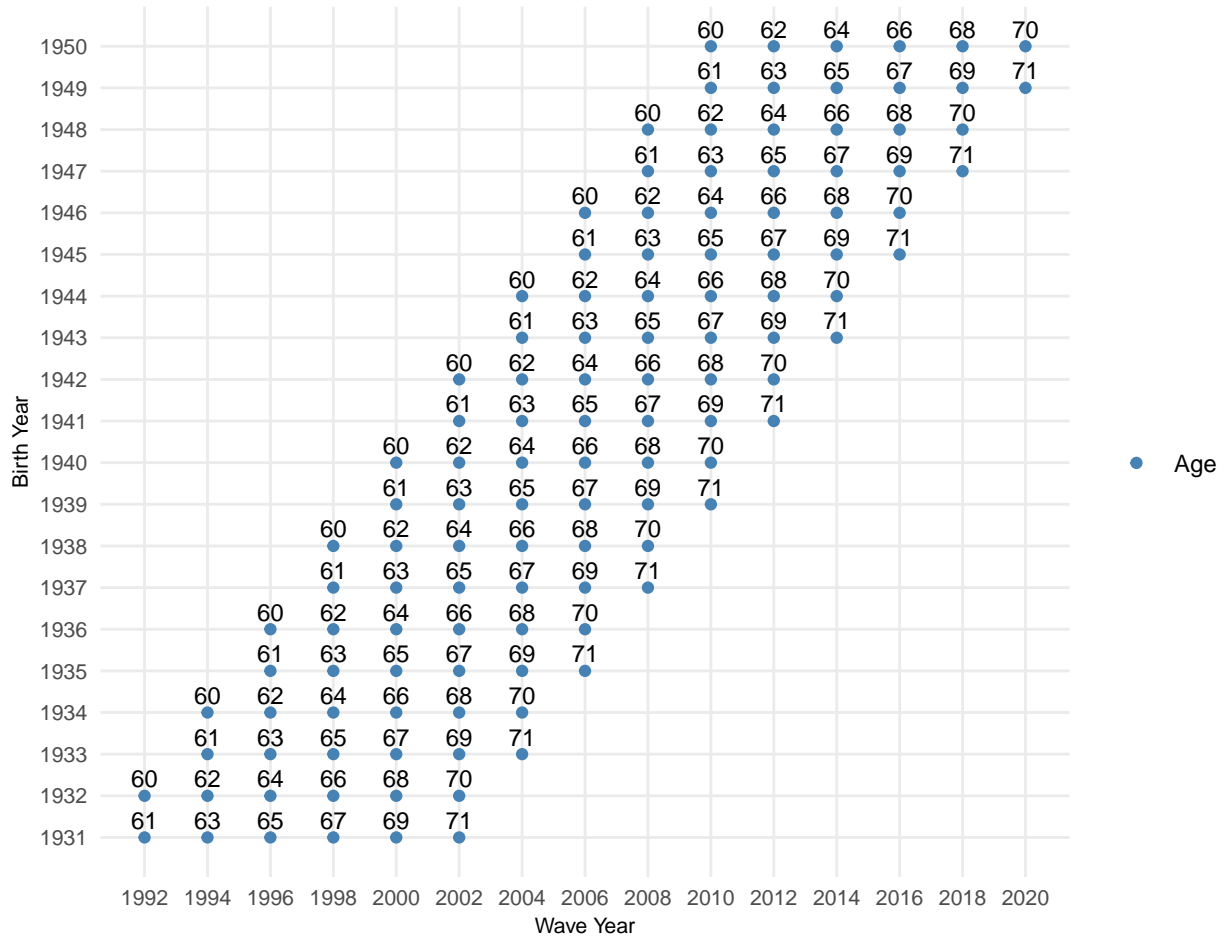
## 4.3 Data and Methods

### 4.3.1 Data source and sample

I draw on data from fifteen waves of the Health and Retirement Study (HRS), a large-scale, nationally representative longitudinal survey conducted every two years since 1992, focusing on older US citizens and their spouses (Bugliari et al. 2023). I extracted my primary cohort from the original HRS data set, which included 16,604 individuals born between 1931 and 1950. I aimed to capture the longest observable period for each participant, spanning from ages 60-61 to 70-71. From this cohort, I excluded 3,399 participants who either did not survive or left the study before reaching age 70-71, and 363 participants who lacked the initial observation at age 60-61. I permitted up to one missing value in the labor force information—the vital data for reconstructing retirement patterns—throughout the observation period. I omitted participants with more than one missing labor force observation from the study. Consequently, the final balanced panel data set consisted of 9,307 participants, each observed six times over a decade, yielding a total of 55,842 observations.

Figure 4.1 illustrates the data structure. The x-axis denotes the interview year, and the y-axis indicates the birth year. The numbers in the figure represent the age of the respondents at the time of the interview. For instance, individuals born in 1931 and 1932 were observed six times between 1992 and 2002. The observation period for this group ended when they reached ages 70-71 in 2002. For those born in 1943 and 1944, they joined the analytical sample at a later point, specifically in 2004, and they were observed until 2014. It is important to note that some individuals in the sample were observed both before and after the diagonal line shown in the figure. However, to maintain consistency, I harmonized the observational period for all individuals. Therefore, I considered only six waves of data, covering the same age range for everyone.

Figure 4.1: Data structure



### 4.3.2 Variables

#### Labor-force status

I reconstructed retirement patterns, a crucial step for the upcoming sequence and cluster analysis, based on self-reported labor-force status data provided by RAND (Bugliari et al. 2023). For each wave, participants disclosed their employment status, which was then reclassified into the following categories:

- Working Full-time: This status is assigned if a participant works 35+ hours per week and 36+ weeks per year. It includes hours from both main and second jobs.

- Working Part-time: If a participant works less than the full-time requirements, they are categorized under this status. If they mention retirement while working part-time, they are classified as partly retired (described below).
- Unemployed: Participants who aren't working but are actively looking for a job, either full-time or part-time. A mere mention of being unemployed is not enough; they must state that they're seeking work.
- Partly Retired: This status is assigned if someone is working part-time and mentions retirement. It indicates a transitional phase between full employment and complete retirement.
- Retired: Participants who aren't working and have any mention of retirement, either through their employment status or through specific questions asking if they consider themselves retired.
- Disabled: This status is given if the participant mentions a disabled employment status and doesn't mention retirement.
- Out of the Labor Force: Assigned to those who are neither working nor seeking employment and do not mention retirement or a disabled status.

The labor-force status data captures participants' statuses five years before and after the traditional retirement age of 65.

## Stratification variables

As I mentioned earlier, I stratified the analyses based on race/ethnicity and migration status among Latine individuals. RAND uses three categories to measure race/ethnicity: Non-Hispanic Whites, Non-Hispanic Blacks, and Hispanics. For simplicity and consistency, I refer to these categories as Whites, Blacks, and Latine, respectively. Within the Latine category, I further divided the data based on nativity, distinguishing between native-born

and foreign-born individuals. To ensure consistency, I excluded non-Latine foreign-born individuals who identified as White or Black from the analyses.

In addition to race and nativity, I also stratified the analyses by gender. Even though gender is not the main focus of this research, it is necessary to separate the analyses in this way because of the significant differences between genders in terms of labor market participation and the overall labor market experience (Greenman and Xie 2008; Chi and Li 2008; Mitra 2003; Mandel and Shalev 2009), consequently, retirement.

## Health indicators

When evaluating the relationship between retirement patterns and health, I utilized seven health indicators, grouped into four broader categories. All were measured at the end of the observed retirement pattern, that is, at age 70-71. I assessed overall health through self-reported health status, which spanned from poor to excellent across five response categories. For analytical convenience, I recoded this metric into ‘good or better’ (0) and ‘fair or worse’ (1).

Furthermore, I examined three commonly occurring chronic conditions. Information was collected on whether the participants had ever received a diagnosis for cardiovascular disease (heart issues or stroke), high blood pressure or hypertension, and diabetes. I dichotomized these variables as either ‘presence’ (1) or ‘absence’ (0). For the cardiovascular disease measure, ‘presence’ was coded if the participant had a diagnosis of heart issues, stroke, or both.

I also evaluated functional limitations using two widely adopted indicators: Activities of Daily Living (ADLs) and Instrumental Activities of Daily Living (IADLs). ADLs were assessed through a summary index that counted the number of ADLs participants reported experiencing ‘any difficulty’ with, including activities like bathing, dressing, eating, getting in or out of bed, and traversing a room. A similar method was used for IADLs, which involved tasks like using the phone, managing finances, taking medications, grocery shopping, and

preparing hot meals. I coded both variables as ‘presence of limitations’ (1) if the participant reported difficulty with at least one task, and ‘absence of limitations’ (0) if no difficulties were reported.

Lastly, I incorporated a pain indicator. Participants were queried about frequent pain experiences, and their responses were encoded as either ‘yes’ (1) or ‘no’ (0).

## Covariates

In the second phase of my empirical strategy, described below, I accounted for a broad range of factors in my regression models to capture observed selectivity, composition bias, and shared factors influencing both retirement patterns and health progression. These included early life disadvantages such as childhood socioeconomic status (SES), denoted by the education of the highest-educated parent (Fahy et al. 2017; Pavela and Latham 2016), and cumulative stress exposure, measured as an allostatic load—an index standardizing the z scores of various health markers, including C-reactive protein, glycated hemoglobin, high-density lipoprotein cholesterol, total cholesterol, Body Mass Index (BMI), waist circumference, and systolic and diastolic blood pressure (Delpierre et al. 2016; Stephan et al. 2016). Additionally, I consider the total number of childhood adversities, ranging from 0 to 3, which involve circumstances experienced before the age of 18 like confrontations with law enforcement, parental physical mistreatment, or witnessing a parent’s frequent and problematic substance abuse (Henchoz et al. 2019; Willis et al. 2019).

I also considered sociodemographic variables, including educational attainment, which I divided into less than 12 years, 12 years, and more than 12 years of education. My models also account for the nature of the longest-held employment, which I classified as white-collar, pink-collar, blue-collar roles, or no work history (Dugravot et al. 2020; Nunes et al. 2016; Salive 2013). I also considered health covariates, which include symptoms of depression, assessed through eight symptoms, a condensed version of the Center for Epidemiologic Studies Depression [CES-D] scale. I also considered alcohol consumption, which I grouped into heavy



drinkers and non-heavy drinkers/abstainers. Lastly, I incorporated smoking history, which I divided into never smokers, past smokers, and current smokers.

In my most stringent models, I also controlled for the observed health outcome at age 60-61 to further mitigate selectivity into retirement patterns due to health issues present at the start of the observation period.

### 4.3.3 Empirical strategy

My research methodology consists of two main phases. Initially, I use sequence and cluster analysis techniques to recreate retirement pattern trajectories for four distinct ethnoracial/nativity groups. I manually group the resulting patterns across ethnoracial/nativity groups to simplify subsequent analysis. Following this, I employ regression models to predict the likelihood of reporting a range of health outcomes—general wellbeing, self-reported chronic condition diagnoses, functional limitations, and pain—based on these retirement patterns. In this stage, I also examine disparities in these associations across the different populations studied.

I aim to recreate retirement trajectories through sequence and cluster analysis (MacIndoe and Abbott 2011). Sequence analysis examines life trajectories by assessing the cost of transitioning between sequences. This involves optimal matching techniques that determine substitution and insertion/deletion costs that allow estimating the distances between sequences in terms of the cost of transforming one sequence into another. I subsequently measure these distances for all possible pairs and employ the Ward algorithm for hierarchical agglomerative clustering to recreate patterns that are similar between each other. Selecting a trustworthy cluster solution is paramount, representing trajectory diversity by reducing within-type variance and increasing between-type variance. My choice leans on four normalized metrics: Hubert's Gamma (H.G.), Point Biserial Correlation (PBC), Average Silhouette Width (ASW), and Hubert's C (H.C.) (Studer 2013). Notably, while a lower H.C. value signals an optimal solution, higher scores in ASW, PBC, and H.G. indicate better

cluster solutions. These indices are detailed in Figure 4.4.

In the second phase of my analysis, I aim to shed light on the link between retirement patterns and the onset of various health outcomes in later life. Specifically, I explore the relationship between retirement patterns and health indicators, estimate interaction effects, and determine the average marginal effects to understand whether the influence of patterns varies across different population groups.

## 4.4 Results

### 4.4.1 Description of the sample

I display the distribution of all variables in the study in Table 4.1. There is a distinct increase in the prevalence of all health conditions from ages 60-61 to 70-71. Hypertension shows the most considerable absolute increase, from 41% to 63%. Meanwhile, cardiovascular disease and diabetes see the highest relative surge, with more than double their prevalence between the two periods. However, self-rated health, functional limitation indicators, and pain-related issues reveal the least change in prevalence.

In Figure 4.2, I present the same health outcomes, but segmented across ethnoracial/nativity groups. Of these, Latine immigrants tend to be the most disadvantaged, particularly evident in self-rated health and IADL indicators. Latine immigrants are three times more likely than Whites to report poor health and twice as likely to report functional limitations. These disparities continue into later age.

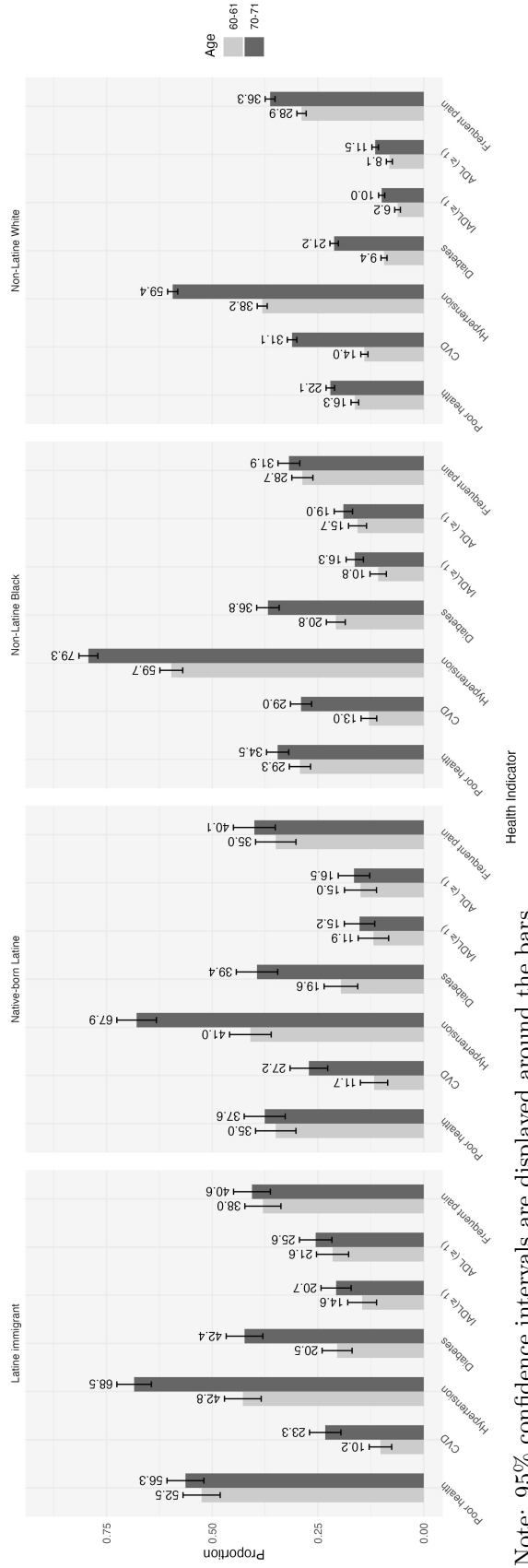
While relative growth in diabetes and hypertension prevalence is similar across groups, the non-White groups show a clear disparity in the prevalence of these conditions at age 70-71 due to a significantly lower base number. The data overall emphasizes the health disparities among different ethnoracial/nativity groups, with Latine immigrants experiencing more pronounced challenges.

Turning back to Table 4.1, labor-force status indicators, including work-related and

Table 4.1: Descriptive statistics

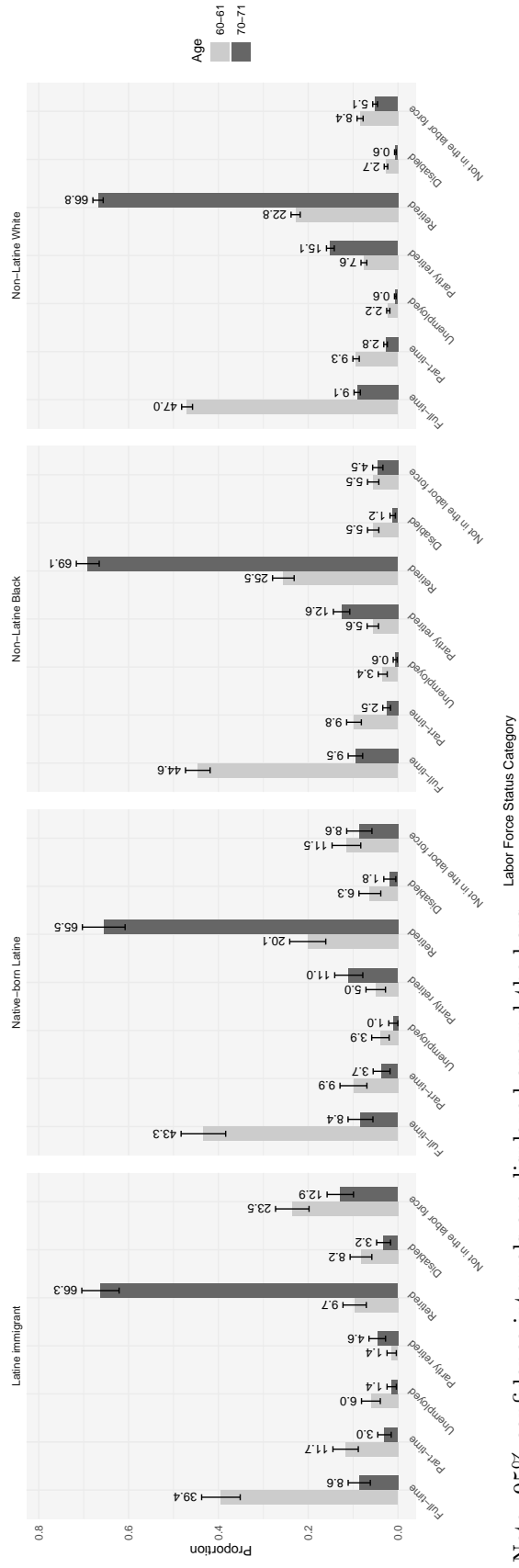
<b>Health outcomes (%)</b>						
	60-61		70-71		N	
<b>Poor health</b>	21.10		26.57		8630	
<b>CVD</b>	13.55		30.20		8640	
<b>Hypertension</b>	41.72		63.18		8640	
<b>Diabetes</b>	12.15		25.51		8640	
<b>IADL5 (&gt;1)</b>	7.66		11.73		8634	
<b>ADL5 (&gt;1)</b>	10.34		13.60		8634	
<b>Frequent problems with pain</b>	29.66		36.08		8589	
<b>Labor-force status (%)</b>						
	60-61	62-63	64-65	66-67	68-69	70-71
Works full-time	46.01	33.46	23.94	16.64	11.98	9.09
Works part-time	9.56	7.11	5.34	4.40	3.44	2.79
Unemployed	2.65	1.84	1.40	1.30	1.02	.67
Partly retired	6.83	10.83	13.18	14.21	14.47	13.91
Retired	22.31	35.08	46.06	54.35	60.13	67.05
Disabled	3.58	2.85	1.89	1.34	1.03	.88
Not in the labor force	9.02	7.44	6.92	6.44	6.18	5.61
N	8640					
<b>Stratification variables</b>						
	60-61		70-71		N	
<b>Ethnoracial/nativity group</b>	60-61		70-71		N	
Non-Latine White	75.16	6494	Gender			
Non-Latine Black	14.64	1265	Female		57.78	4992
Latine immigrant	5.76	498	Male		42.22	3648
Native-born Latine	4.43	383				
<b>Health and sociodemographic covariates</b>						
	60-61		70-71		N	
<b>Educational attainment</b>	60-61		70-71		N	
< 12 years	22.07	1905	<b>Job with the longest tenure</b>			
12 years	34.94	3015	Prof/Managerial		33.02	2598
> 12 years	42.99	3710	Manual		27.35	2152
<b>Ever smoked</b>			Sales/Clerical		25.60	2014
Never	40.65	3489	Service		11.30	889
Before	47.96	4116	Never worked		2.72	214
Current	11.39	978	<b>Childhood traumatic events</b>			
<b>Drinking status</b>			Zero		77.44	5964
Abstainer or mild	85.82	7415	One		18.00	1386
Heavy drinker	14.18	1225	Two		4.19	323
			Three		.36	28
	Mean	(SD)	Min	Max	N	
<b>Parent's education (years)</b>	10.36	(3.72)	0	17	8112	
<b>CESD</b>	1.29	(1.87)	0	8	8234	
<b>Allostatic load</b>	1.06	(.97)	0	5	7196	

Figure 4.2: Descriptive statistics of health outcomes, by ethnoraacial/nativity status at ages 60-61 and 70-71



Note: 95% confidence intervals are displayed around the bars.

Figure 4.3: Descriptive statistics of labor force statuses, by ethnoracial/nativity status at ages 60-61 and 70-71



Note: 95% confidence intervals are displayed around the bars.

retirement-related statuses, reveal a substantial shift. Full- and part-time employment rates decline with age, while partial and full retirement rates increase. Similarly, the count of individuals not in the labor force also drops with age, matching the pattern observed in the disabled category.

I also illustrate the distribution of labor-force statuses across ethnoracial/nativity groups. For simplification, Figure 4.3 displays only two key ages, 60-61 and 70-71. One striking observation is the notably low percentage of retired Latine immigrants at age 60-61 compared to all other groups. This data suggests that Latine immigrants tend to delay retirement. Interestingly, the same group exhibits the highest relative growth in retirement status by age 70-71. Moreover, it is noteworthy that the proportion of Latines not part of the labor force is significantly higher than other groups at ages 60-61. Even though this percentage substantially decreases with age, more rapidly than all other groups, it remains noticeably higher at age 70-71, underscoring unique patterns of labor-force engagement among Latinos.

In terms of stratification variables, Latine immigrants represent approximately 6% of the sample, with native-born Latines accounting for about 4.5%. Non-Latine Whites constitute over 75% of the sample, while non-Latine Blacks represent around 15%. Notably, the majority of the sample is female, accounting for nearly 60% of respondents.

As for health and sociodemographic covariates, a significant majority of respondents, over 75%, have achieved more than 12 years of education. However, this figure varies greatly among ethnoracial/nativity groups, with over 70% of Latine immigrants reporting less than 12 years of education, contrasted with less than 15% among Whites. The respondents' longest-held jobs were predominantly professional or managerial, manual, or sales/clerk positions. Only about 8% of Latine immigrants held a professional or managerial job, while this figure exceeds 20% in all other groups.

With regard to health behaviors, a majority of the sample reported having smoked at some point in their lives, although only a small fraction currently smokes. Approximately 14% of the sample are classified as heavy drinkers. Regarding allostatic load, the average

is 1.06, with Whites demonstrating a significantly lower load compared to all other groups. Depressive symptoms show a distinct gradient across ethnoracial/nativity groups, with Latine immigrants recording the highest average, followed by native-born Latines, Blacks, and Whites who report a substantially lower number of depressive symptoms.

Finally, in terms of life course antecedents, childhood traumatic events, and parents' education, there is a significant ethnoracial/nativity gradient. Latine immigrants report their parents having an average of 5 years of education, while Whites report almost 11 years. Native-born Latine report an average of 7 years, and Blacks report around 9 years. Most respondents did not experience any childhood traumatic events, and surprisingly, no clear patterns emerge around this variable among the different ethnoracial/nativity groups.

#### 4.4.2 Retirement patterns

In this study, I primarily used sequence analysis to identify retirement patterns among various demographic groups. This methodology simplifies longitudinal data into clear-cut life course trajectory types. In this case, I focus on employment trajectories around retirement age. Each sequence spans six temporal points and involves seven potential statuses (Studer 2013).

As described above, an important step in sequence analysis is determining the optimal number of clusters that represent the spectrum of life trajectories. To establish this, four selection criteria were considered: ASW, PBC, HG, and HC. Because clustering procedures do not involve a specific null hypothesis about the number of data clusters (Dubes and Jain 1980), I used past research as a guide, which suggests a range of three to twelve clusters (Cornwell 2015).

I divided the sample into four groups: Latine immigrants, native-born Latines, non-Latine Blacks, and non-Latine Whites. For each group, I individually identified an optimal number of clusters between four and seven, optimizing between-cluster and within-group differences (Figure 4.4). These clusters were further categorized into eight broader patterns to allow for comparison across groups.

Figure 4.4: Fit statistics for several sequences' cluster solutions for different ethnora-  
 cial/migration groups

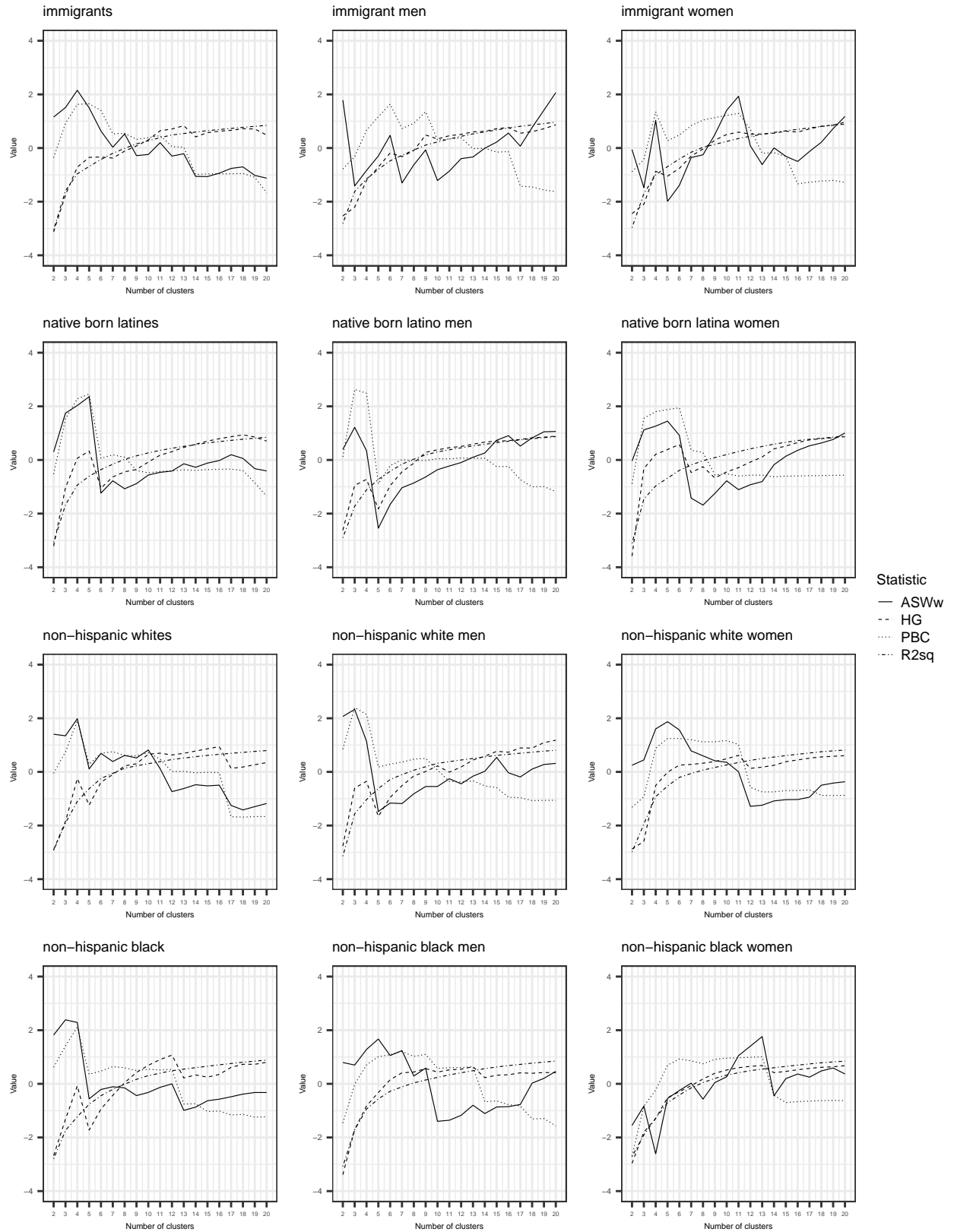




Figure 4.5: Observed and bootstrapped values of the standardized ASW and HC values for a varying number of clusters using the combined (sequencing and duration) randomization null model, by ethnoracial/nativity group

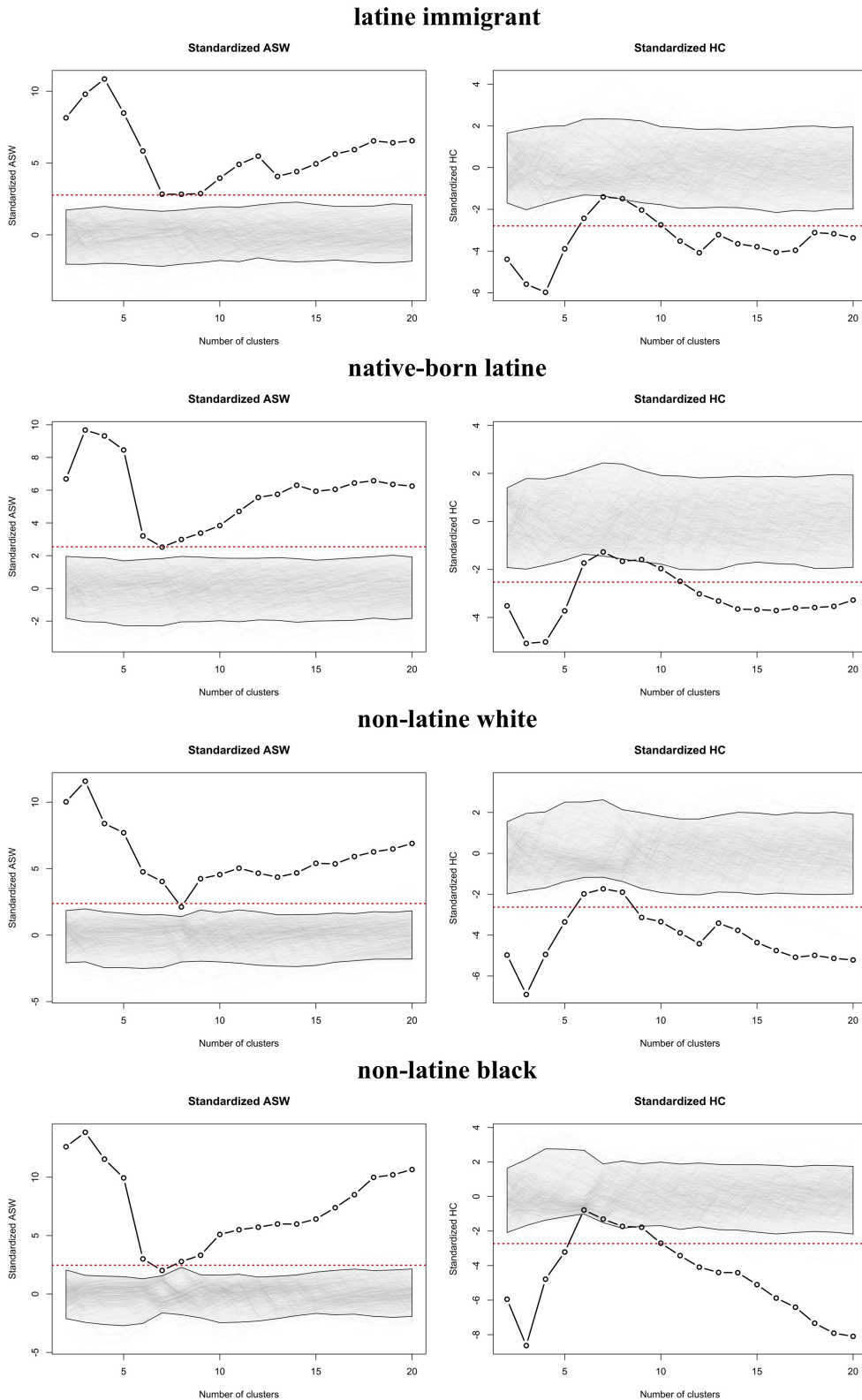
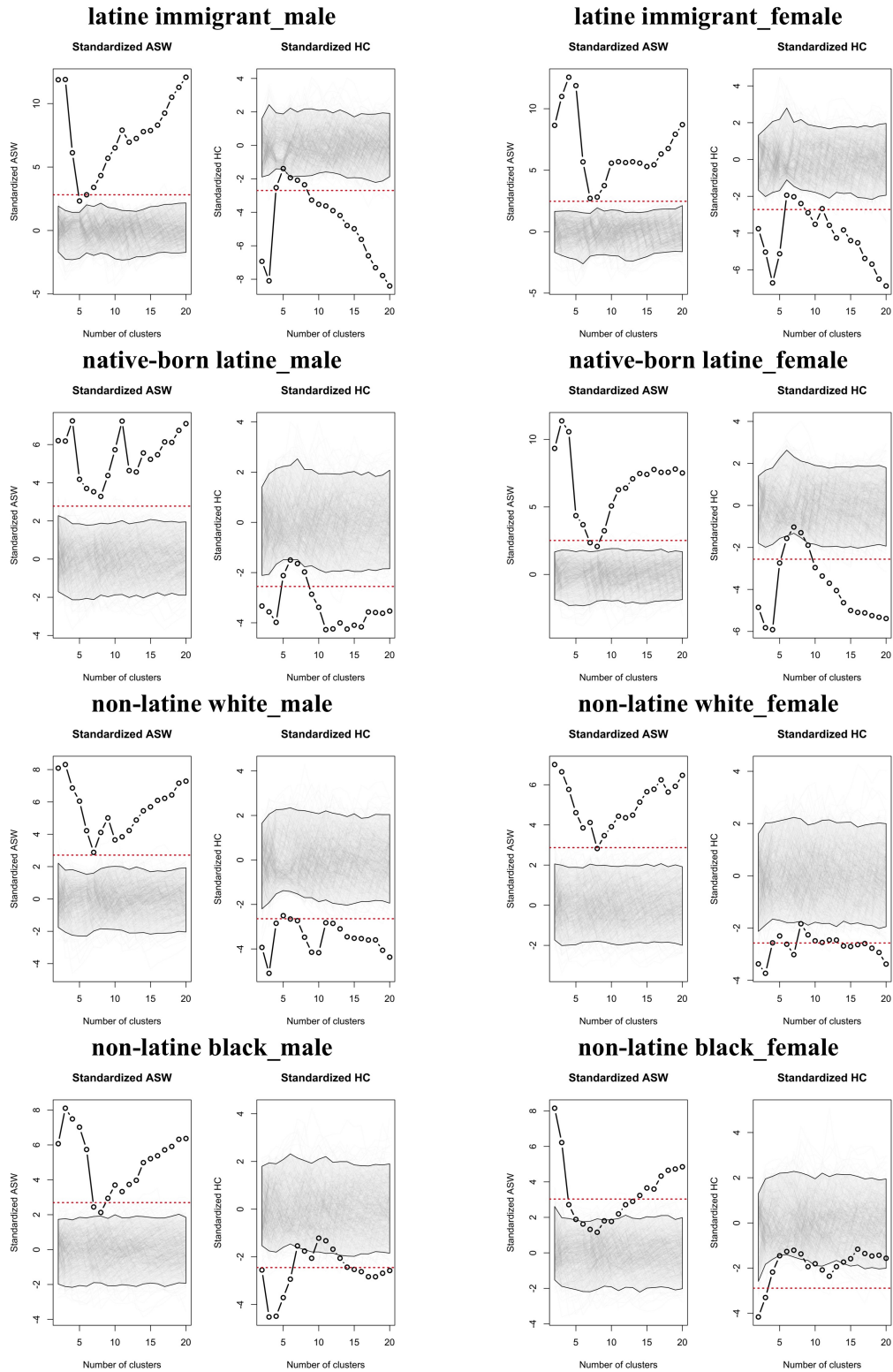


Figure 4.6: Observed and bootstrapped values of the standardized ASW and HC values for a varying number of clusters using the combined (sequencing and duration) randomization null model, by ethnoracial/nativity group and gender



To confirm the reliability of the cluster solutions, I employed Matthias Studer’s methodology (2021), comparing the quality of observed clusters with similar, but non-clustered data. This validation process allowed me to make a robust comparison of cluster quality indices (CQIs) for the observed and generated data (Figures 4.5 and 4.6).

The results suggest that the chosen cluster solutions fall within an acceptable range for all samples. Gender-specific variations were observed, however. For immigrant men, although a six or nine-cluster solution seemed optimal (Figure 4.6), a six-cluster solution was chosen due to smaller sample sizes and similarity in the additional clusters in the nine-cluster solution. For native-born Latinos, non-Latino Whites, and non-Latino Blacks, three-cluster, three-cluster, and five-cluster solutions were selected respectively. Among women, Latina immigrants were best represented by a four-cluster solution, whereas native-born Latinas fit a five-cluster solution.

Having successfully distilled the retirement patterns into manageable and comparable clusters, we are now equipped to delve into a detailed analysis of these patterns across different sociodemographic groups in the following sections.

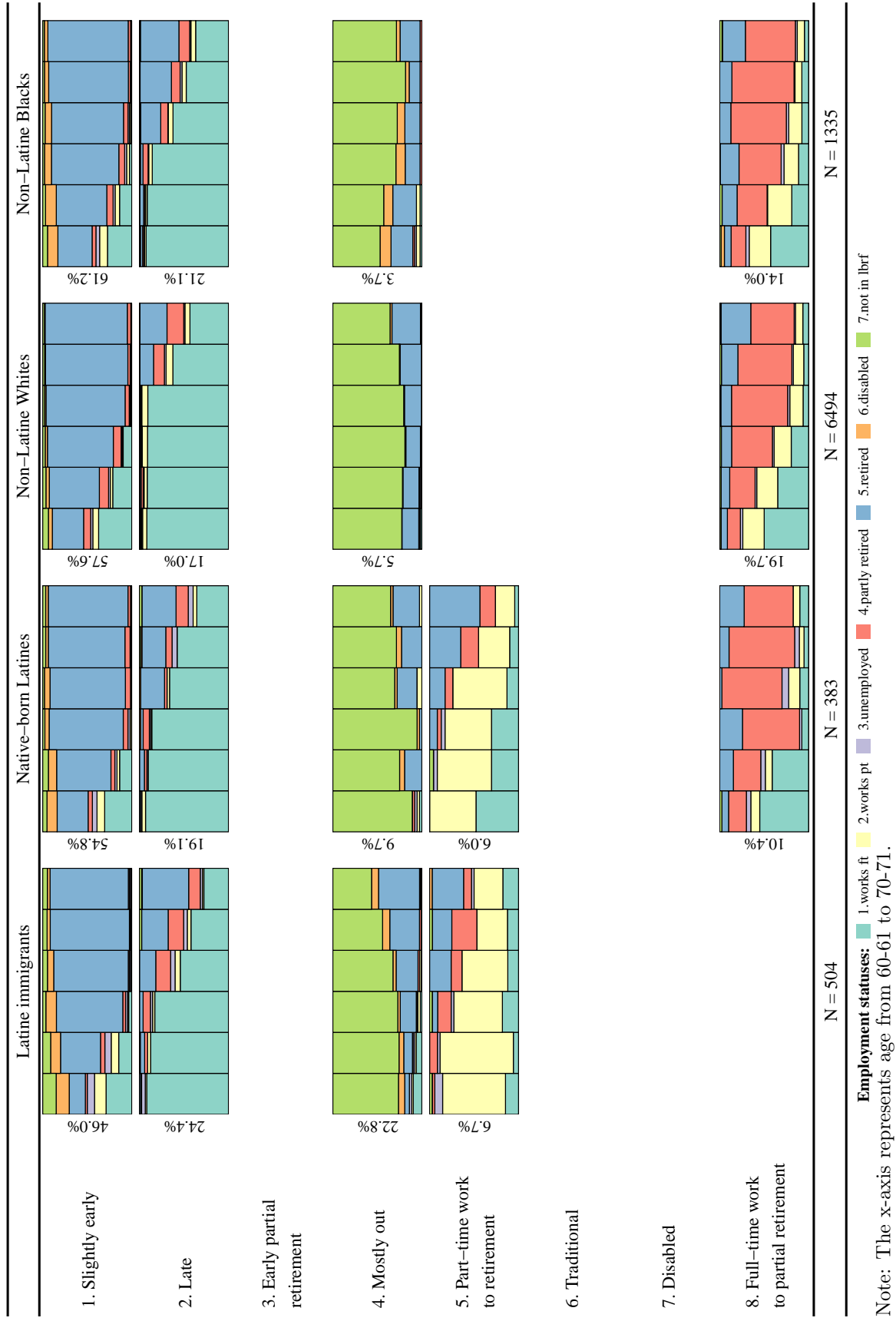
## Overall sample

Figure 4.7 displays the distribution of retirement patterns across the ethnoracial/nativity status groups, without factoring in gender. Each small plot represents the proportion of individuals in each status at each age, ranging from 60-61 to 70-71.

The figure details three prominent patterns which are universally applicable across all groups. The first prevalent pattern, termed ‘slightly early’, characterizes individuals opting for complete retirement between ages 62 and 64, sustaining this status throughout the observed timeframe. This pattern, while universally observed, presents variable prevalence across groups. For example, among Latine immigrants, this pattern accounts for 46% of cases, whereas in other groups it may represent over half or even 60% of the population.

The ‘late’ pattern, the second common trend, is typified by individuals who maintain

Figure 4.7: Retirement sequences by migration status and ethno-racial group: overall sample



full-time employment past the age of 65. While some eventually retire, a significant proportion persist in work until the end of the observation period. This pattern is more prevalent in Latine immigrants compared to other groups, but is notably less frequent among Whites.

The third pattern, coined as ‘mostly out’, comprises individuals who are primarily outside the labor force for most of their career, with some eventually transitioning to retirement from this status. This group is more prevalent among Latine immigrants, accounting for almost 23% of the sample, compared to about 10% among native-born Latines, and 5% or less among Blacks and Whites.

Unique to the Latine community is the ‘partial to full-retirement’ pattern, regardless of nativity. This trend features individuals working part-time for the majority of the period around retirement age, with some transitioning to retirement, and exhibits comparable prevalence across both native and immigrant Latine groups.

Lastly, the ‘partial retirement’ pattern, which includes individuals transitioning from full-time or part-time employment to partial retirement around ages 64 to 66, is prevalent across all native-born groups, with particular prominence among Whites.

After I established the clusters for the overall sample, I undertook gender-based stratification of the samples. This is important as gender has historically influenced labor market engagement (Greenman and Xie 2008; Chi and Li 2008; Mitra 2003; Mandel and Shalev 2009), and consequently, employment patterns, retirement decisions, and opportunities. Furthermore, clustering of the overall sample may mask patterns specific to gender.

## Men’s retirement patterns

The retirement patterns among men, depicted in Figure 4.8, highlight an increased diversity of retirement patterns among Latino immigrants and non-Latino Black respondents. Like the overall sample, the ‘slightly early’ and ‘late’ patterns are mostly observed in most groups, indicating a universal pattern. However, these patterns are notably less common among Latino immigrant men compared to other groups, except for the ‘late’ pattern seen in non-

Latino Black men.

Interestingly, the ‘early partial retirement’ pattern emerges only when the sample is stratified by gender. This pattern parallels the ‘slightly early’ pattern, but participants transition into partial retirement instead of full retirement. In the overall cluster solution, most respondents from this category were either classified under the ‘slightly early’ or the ‘partial retirement’ patterns. Additionally, the ‘mostly out’ pattern, prevalent in the overall solutions, does not surface in the men-only sample.

The findings also suggest that the ‘part-time work to retirement’ pattern is unique to Latino immigrants, rather than being applicable to both native and foreign-born as previously observed. Moreover, the ‘full-time work to partial retirement’ pattern appears to represent only a segment of the Latino immigrant population. The ‘traditional’ pattern, absent among Latinos in the overall sample, is now evident in the men’s sample, with considerable representation, accounting for nearly 23% of Latinos.

## Women’s retirement patterns

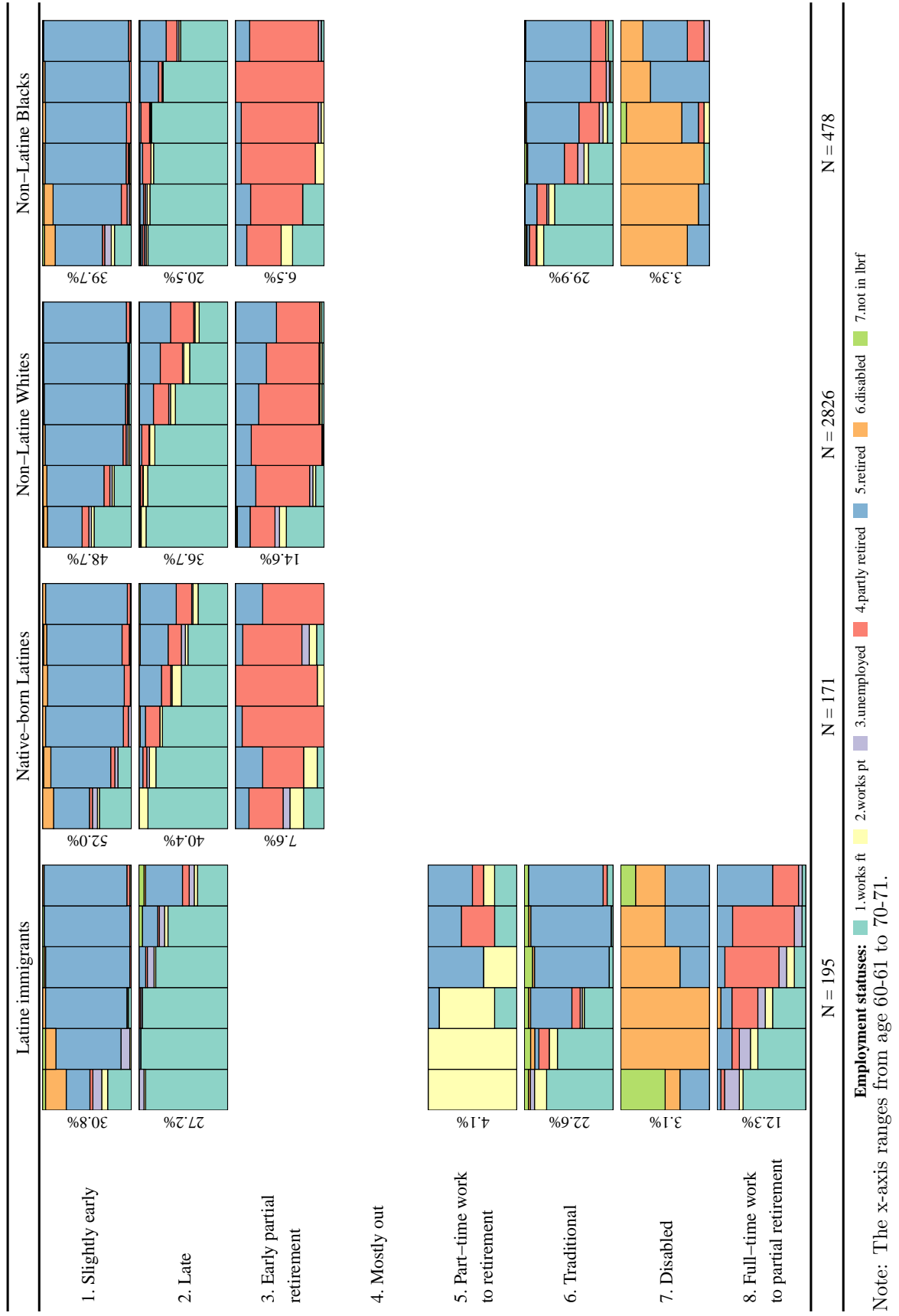
As illustrated in Figure 4.9, women exhibit more universally applicable retirement patterns compared to men. Four patterns consistently appear across all ethnoracial/nativity groups, albeit with significant variability in their prevalence.

The ‘slightly early’ pattern is especially common among native-born Latinas, exceeding 55%, while all other groups fall within the 30 to 40% range. The ‘late’ pattern is notably prevalent among Latina immigrants and non-Latina Whites, surpassing 20%.

A discernable gradient is observed in the prevalence of the ‘mostly out’ pattern. Latina immigrants account for an overrepresented proportion of women following this trajectory, representing over a third of the distribution. This pattern reduces to 21% among native-born Latinas, 14% among White women, and dwindles to a mere 6% among Black women.

The ‘part-time work to retirement’ pattern remains relatively consistent across all groups, around 10%. In terms of unique patterns, the ‘early partial retirement’ sequence

Figure 4.8: Retirement sequences by migration status and ethno-racial group: male-only sample



is exclusive to non-Latina women, with notable differences in prevalence between Black and White women.

Interestingly, the ‘traditional’ pattern only surfaces among Black women, reaching 27%, and the ‘full-time work to partial retirement’ pattern is only seen among native-born Latinas.

These sequence and cluster analyses findings reveal a diverse set of retirement patterns, with several broadly applicable across all groups and others specific to particular ethnoracial/nativity groups. Notably, Latine immigrants feature prominently in these observations, showcasing unique retirement patterns distinct from other ethnoracial/nativity groups. The data, when disaggregated by gender, further unveils the complexity of retirement trajectories among Latine immigrants.

The retirement pathways of Latine immigrants reflect an intersection of ethnicity, immigration status, and gender, underscoring the need for a more nuanced understanding of retirement processes. These findings emphasize that retirement is not a monolithic experience but a dynamic process influenced by a myriad of socio-demographic factors.

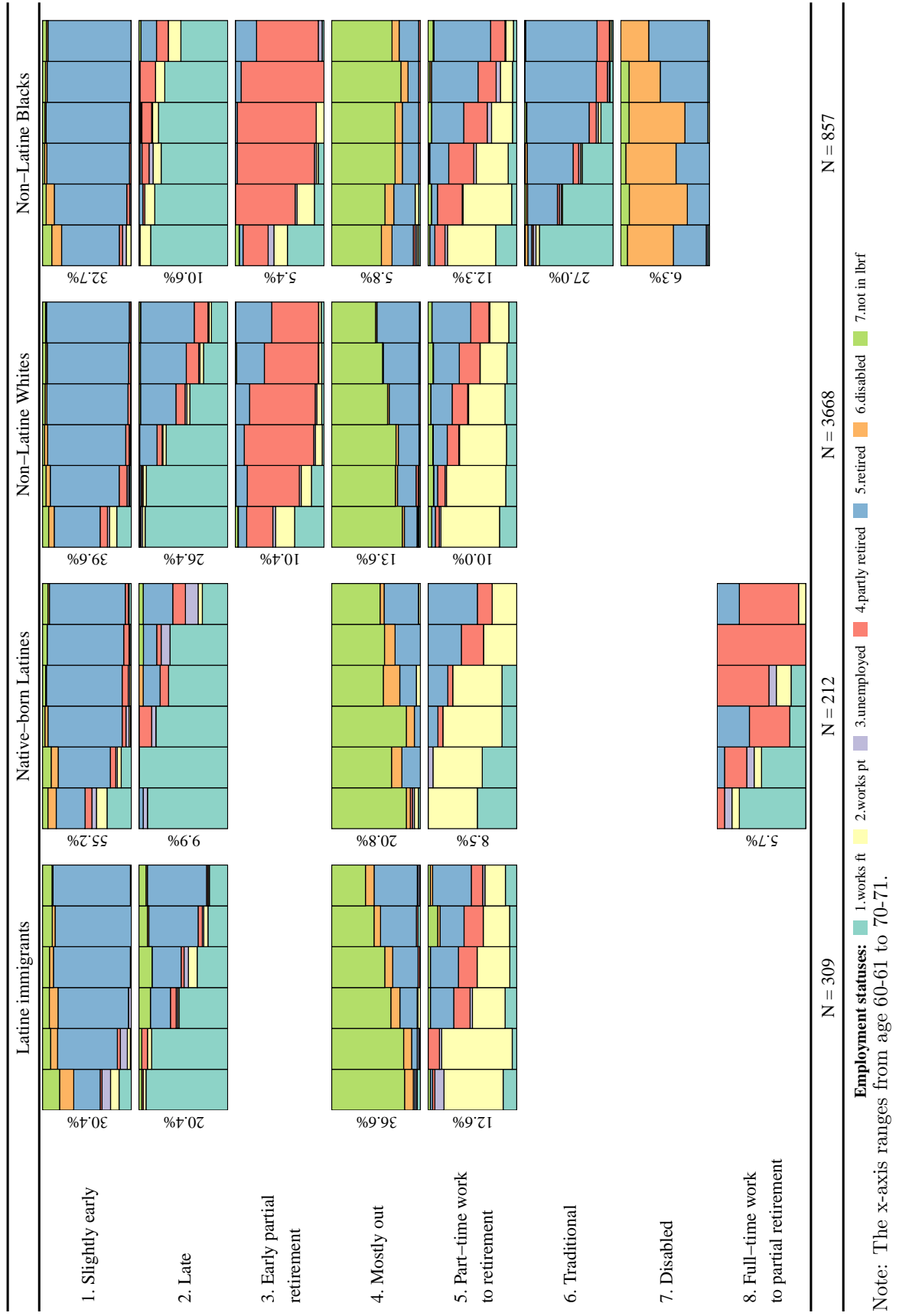
#### 4.4.3 Retirement patterns and health

Building on my preceding analysis of diverse retirement patterns, particularly focusing on Latine immigrants, I now explore the intersection of these retirement trajectories and health outcomes across different ethnoracial/nativity groups. My aim is to understand how the retirement experiences I observed might be associated with health, a critical aspect of quality of life in the retirement years.

I want to stress that the retirement patterns I have identified are not just the end result of an individual’s career. They likely have profound implications for retirees’ wellbeing, possibly shaping their health status and their ability to engage in various activities during their retirement years. By investigating this association, we can better understand the implications of retirement decisions and patterns on retirees’ lives, beyond their financial or employment aspects.



Figure 4.9: Retirement sequences by migration status and ethno-racial group: female-only sample



## Bivariate associations

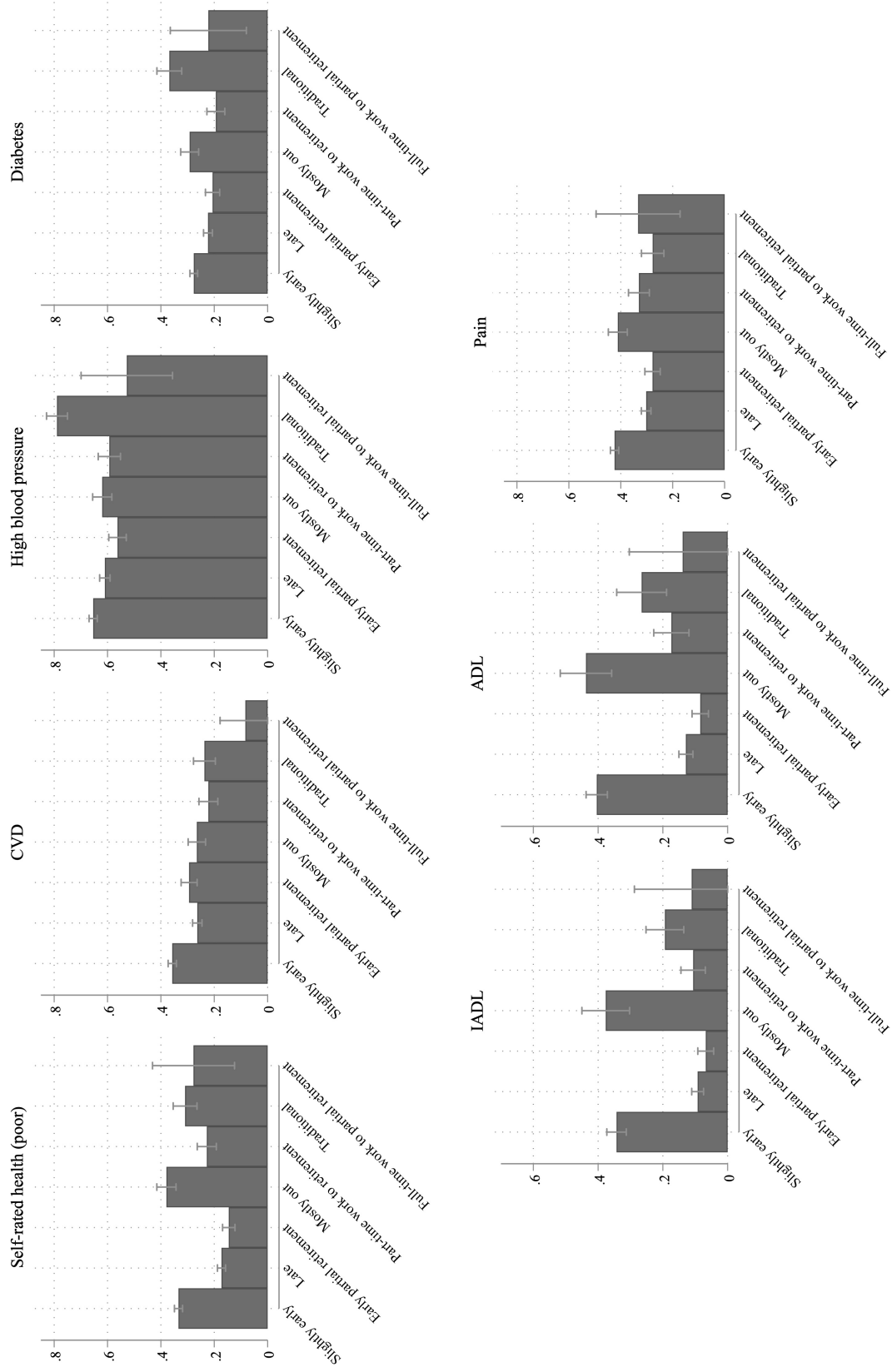
To understand the relationship between the retirement patterns I observed and health, I first estimated the bivariate relationship between the patterns and a comprehensive set of health indicators observed at the end of the retirement trajectory. Figure 4.10 shows the proportion of people who reported having poor health status, by retirement pattern. Additionally, it displays the prevalence of CVDs, high blood pressure, and diabetes for each pattern. It also shows the average value for each pattern of the 5-points ADL and IADL scales. Finally, it illustrates the proportion of people who report experiencing pain regularly. I present all proportions and means with 95% confidence intervals.

The graph first and foremost illustrates that for variables such as functional limitations (ADLs and IADLs) and pain, a notable health disadvantage is evident among groups that adhere to either the ‘slightly early’ or ‘mostly out’ patterns. This health disparity is similarly noticeable in the self-rated health indicator and, to a degree, in the chronic conditions variables. Interestingly, around 20% of individuals report encountering difficulties with at least one item in the ADL and IADL indicators. This percentage significantly contrasts with other groups, where typically less than 10% report any functional limitations.

Upon scrutinizing chronic conditions, specifically Cardiovascular Disease (CVD), high blood pressure, and diabetes, a health disadvantage in the ‘traditional’ pattern also becomes apparent. A high prevalence of high blood pressure is universally observed; however, it is notably prominent among those adhering to the ‘traditional’ pattern, with a striking near-80% incidence rate. Similarly, diabetes is reported by 37% of those following this trajectory by the conclusion of the observation period, a percentage considerably higher than the 19% found in the ‘part-time work to retirement’ pattern.

A health advantage seems to distinguish two patterns across most health indicators. In terms of self-rated health, both the ‘late’ and ‘early partial retirement’ patterns reveal significantly better subjective health compared to all other groups. This trend mirrors the findings with functional limitations, where beyond the average figures, only around 6% of

Figure 4.10: Health indicators across retirement patterns



Note: For self-rated health, CVD, high blood pressure, diabetes, and pain, values represent proportions. For IADL and ADL values represent a mean. The 'disabled' retirement pattern is omitted given it's endogenous relationship with health. Bars represent proportions and means, and error bars represent 95% confidence intervals.

individuals in these groups report experiencing any sort of limitation.

## Disentangling these associations

To gain a deeper understanding of these associations and to rule out the possibility that the composition of these patterns is driving the associations, I carried out a regression analysis. Figure 4.11 presents the Average Marginal Effects (AMEs) of the retirement patterns on the probability of reporting each health outcome. I estimated each coefficient relative to following the ‘Slightly early’ pattern. All regression models and Average Marginal Effects are displayed in Appendix B.

In Model 2, I incorporate ethnoracial/nativity group and gender, categories that I took into account in the construction of the patterns themselves. This display of association thereby rules out composition effects of the patterns based on these two sociodemographic variables.

In Model 3, I calculate the AMEs, controlling not only by the aforementioned sociodemographic variables but also by parents’ educational attainment, childhood stressful events, health behaviors, mental health indicators, and allostatic load. Given these factors could influence an individual’s likelihood to follow a specific pattern, the displayed associations, to some extent, rule out certain self-selection effects.

In Model 4, in addition to the previously mentioned variables, I incorporate the health outcome at the beginning of the observation period, which precedes the start of the retirement pattern. This inclusion allows Model 4 to offer a more intricate insight into how health prior to retirement patterns might shape health outcomes in the post-retirement age. For non-binary variables were included in the model in their original form, and for binary variables, I used a subset of the sample including all individuals who had not reported the health outcome at age 60-61. The advantages of Model 4 are manifold:

1. Clarity in Interpretation: By controlling for health at the onset of the retirement patterns observation, the impact of retirement patterns on health outcomes at age

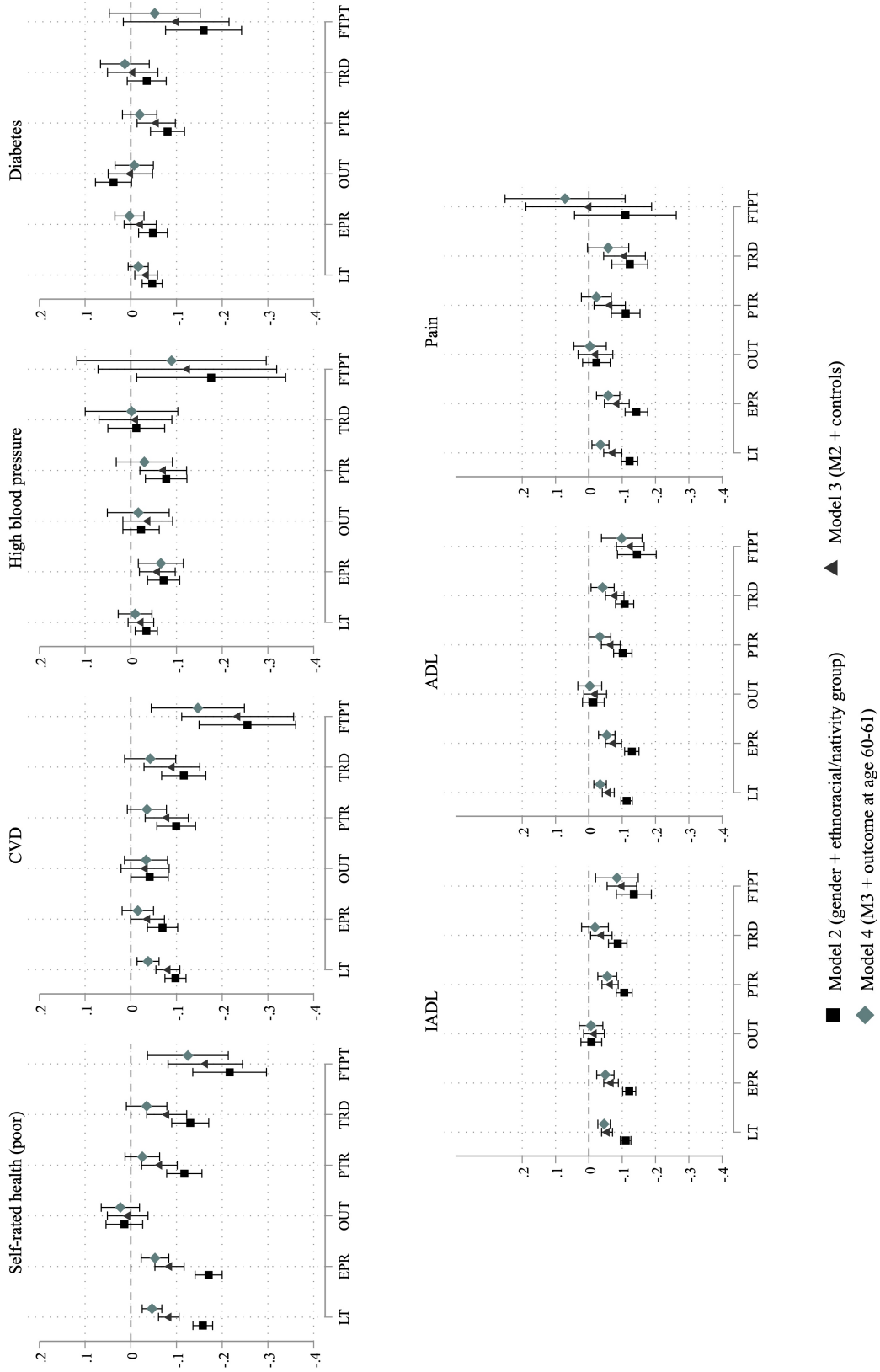
70-71 can be discerned with a clearer lens, factoring in individuals' baseline health conditions.

2. Mitigation of Confounding Effects: Model 4 takes into account the potential confounding role of initial health on retirement decisions and subsequent health outcomes. This makes the associations observed in the model more robust and reliable.
3. Enhanced Argument for Causality: While my analyses do not aim to establish causality unequivocally, by adjusting for the initial health status, Model 4 bolsters the case for a causal linkage between retirement patterns and health outcomes at age 70-71. This is particularly significant as it considers an individual's health status preceding the commencement of their retirement journey.

In summary, while Models 2 and 3 provide insights into how sociodemographic variables and other potential confounders relate to retirement patterns and health outcomes, Model 4 offers a more comprehensive perspective by also accounting for health trajectories leading up to retirement.

The figure emphasizes a stark health disadvantage of the 'Slightly early' pattern across all health indicators. This association is particularly apparent when looking at self-reported health, cardiovascular diseases (CVD), functional limitations, and pain. For instance, an individual following a 'late' pattern is 8.4 percentage points less likely to report poor health status compared to someone who followed a 'slightly early' pattern, after adjusting for sociodemographics and life course antecedents (Model 3), and 4.6 percentage points after adjusting for self-rated health at age 60-61 (Model 4). One of the most substantial marginal effects can be seen when comparing the 'full-time work to partial retirement' pattern to the 'slightly early' one in terms of the probability of having been diagnosed with a cardiovascular disease. Those who follow the 'full-time work to partial retirement' trajectory are 22 percentage points less likely to report having had a CVD compared to those who pursued a 'slightly early' pattern (Model 3). When including only individuals who had not had a CVD

Figure 4.11: Average marginal effects of Retirement Patterns over the probability of reporting each health outcome



Note: X-axis labels correspond to LT='Late'; EPR='Early partial retirement'; PTR='Part-time work to retirement'; TRD='Traditional'; FTPT='Full-time work to partial retirement.' Average marginal effects should be interpreted as the marginal change in the probability of reporting each outcome, relative to being classified into the 'Slightly early' pattern. Models 2 and 3 correspond to the ones displayed in appendix tables B.1 through B.7. Model 2 includes ethnic/racial/nativity group and gender, and model 3 also includes sociodemographic and health covariates.

at the beginning of the observation period, this estimate goes down, but it still significant and substantively relevant, reaching -14.7 percentage points (Model 4).

Moreover, the figure corroborates the health disadvantage of the ‘mostly out’ pattern, even after adjusting for sociodemographic, life course antecedent factors and baseline health. Unlike most patterns for most health outcomes, this pattern shows no difference relative to the ‘slightly early’ type, showing a very consistent estimate across all models. Further analyses, limiting the sample to women only, showed these associations did not vary across ethnoracial/nativity groups. Consistent with existing literature, being outside the labor force is detrimental for women’s health (Zella and Harper 2020). This underscores the potential impact of retirement patterns on health outcomes, which extend beyond immediate financial and employment implications.

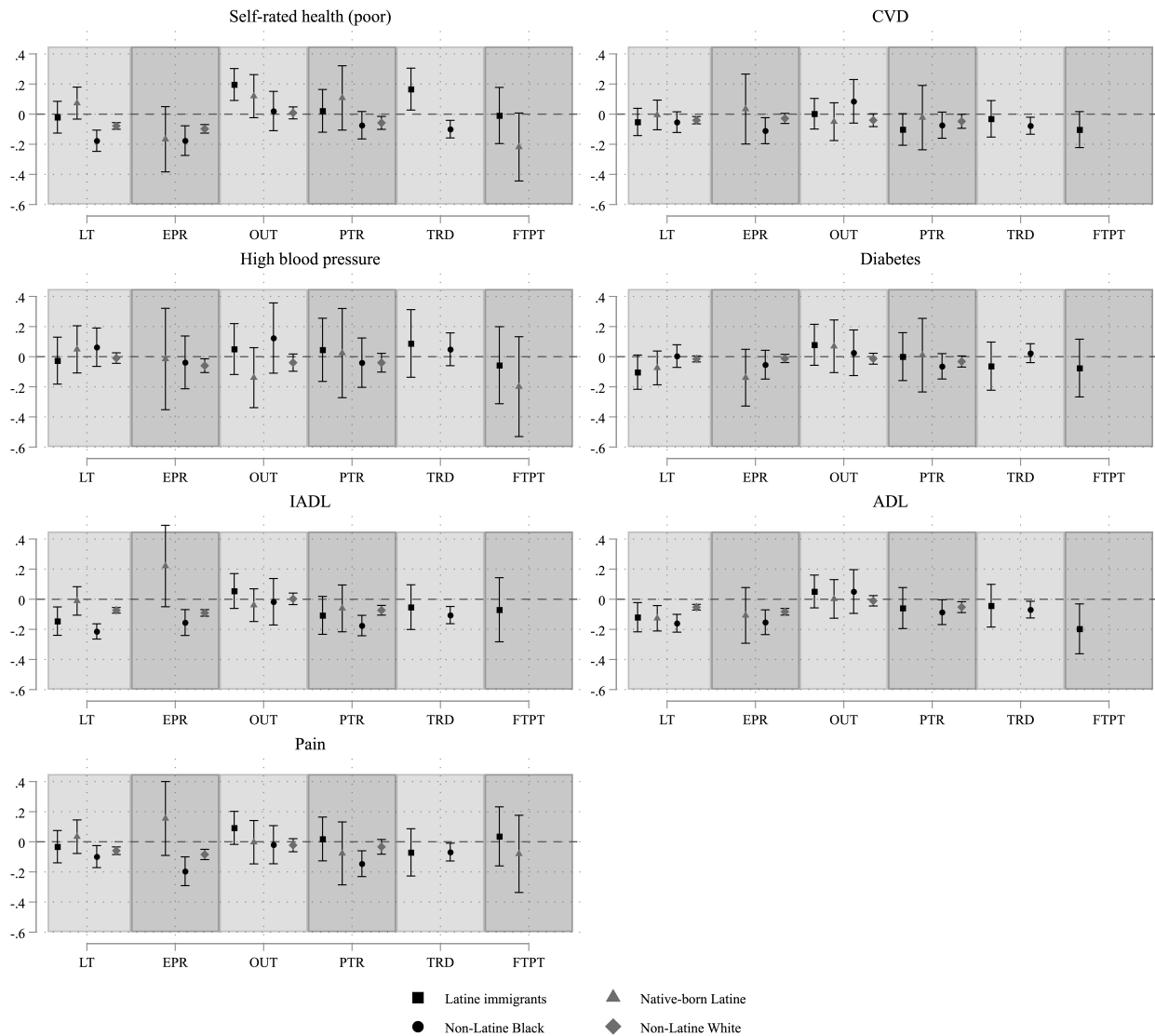
### Variations across ethnoracial/nativity groups

One of my study objectives is to understand the varied relationships between retirement patterns and health across the ethnoracial/nativity groups I am studying. In Figure 4.12, I present the AMEs of retirement patterns – relative to the ‘slightly early’ pattern – for all health outcomes and based on Model 4, across the main sociodemographic groups I have defined in this study: Latine immigrants, native-born Latines, non-Latine Blacks, and non-Latine Whites.

My findings show that, overall, the health disadvantage of the ‘slightly early’ pattern, compared to the ‘late’ pattern, persists across most health outcomes. However, the ‘late’ pattern’s advantage does not stay significant for all groups across all health outcomes. For instance, in six out of seven health outcomes, the ‘late’ pattern offers significant health advantages for the White and Black groups. Yet, for several health outcomes, this advantage does not apply to both Latine groups, native- and foreign-born.

Interestingly, I observed that the health disadvantage of the ‘mostly out’ pattern appears for most groups across most health outcomes. But it is significant to note that for

Figure 4.12: Average marginal effects of retirement patterns, by ethnoracial-nativity group



the Latine immigrants group, this trajectory is especially detrimental in terms of self-rated health and functional limitations, even increasing the likelihood of reporting these health conditions compared to the ‘slightly early’ pattern.

Based on the data, one can conclude that retirement patterns significantly correlate with health outcomes. Groups following ‘slightly early’ or ‘mostly out’ patterns seem to exhibit a health disadvantage, manifested in higher rates of functional limitations, pain, and chronic conditions. Conversely, I found that the ‘late’ and ‘early partial retirement’ patterns



are often associated with better health outcomes, evident from improved self-rated health and a lower prevalence of functional limitations among these groups.

The ‘traditional’ pattern, despite its high prevalence of specific chronic conditions such as high blood pressure and diabetes, does not uniformly present either an advantage or disadvantage, which leads me to suggest that other factors could be influencing these health outcomes. Moreover, there are significant variations across ethnoracial/nativity groups in how these patterns correlate with health later in life. The advantage of certain patterns diminishes for Latine immigrants, turning some of them even more detrimental for this group.

## 4.5 Discussion

The complex dynamics of Latin American immigrant retirement patterns, as discussed in this chapter, present a compelling story filled with intricacies and significant consequences. In the context of the broader socio-political environment of the United States and the existing literature, these patterns highlight the diverse challenges and opportunities Latin American immigrants encounter during their transition from active labor to retirement (Scommegna 2016; Johnson, Mudrazija, and Wang 2017).

Existing literature highlights the influence of socio-economic and institutional factors in retirement decisions (Meng, Sundstrup, and Andersen 2020; Leinonen et al. 2018). Retirement trends among Latin American immigrants, for instance, arise from factors such as labor market dynamics in their home countries and the U.S. and return migration, and the immigration policies and societal norms they confront in the United States (Johnson, Mudrazija, and Wang 2017). These ever-evolving factors play a crucial role in guiding their retirement decisions and, subsequently, their health outcomes in later life (Dingemans and Möhring 2019; Gorry, Gorry, and Slavov 2015).

Sequence analysis lends a nuanced comprehension of retirement patterns among various demographic groups. This methodology, adept at condensing longitudinal data into distinct

life course trajectory types (Cornwell 2015), identified unique retirement patterns among Latine immigrants, native-born Latines, non-Latine Blacks, and non-Latine Whites. As detailed in the results, these patterns range from the universally observed ‘slightly early’ and ‘late’ patterns to the distinctive ‘partial to full-retirement’ pattern predominant in the Latine community. There is significant heterogeneity in retirement patterns across groups, especially among Latino immigrant men, reinforcing the hypothesis (H1) that retirement patterns are deeply influenced by the specific challenges Latin American immigrants face, compounded by gender dynamics (Johnson, Mudrazija, and Wang 2016).

Health disparities stemming from these retirement patterns further accentuate the necessity of understanding the overarching institutional structures (Heyma 2004; Börsch-Supan, Brugiavini, and Croda 2009). The health outcomes of Latin American immigrants, particularly those selected into the ‘slightly early’ or ‘mostly out’ retirement patterns, bear the cumulative effects of their life experiences within these structures. As expected (H2), these varied patterns correlate with differing health outcomes in later life. Furthermore, the stark health disadvantages noted among certain Latine immigrant retirement patterns (H3) emphasize their vulnerability to unfavorable health outcomes post-retirement. A pronounced gender disparity is evident, with Latina immigrants being majorly represented in the ‘mostly out’ group, thus showcasing layered disadvantages owing to their gender, ethnicity, immigrant status, and retirement patterns.

The gender-specific nuances in these patterns further illuminate the intricate nexus of race, ethnicity, gender, and immigration status (Silverman, Skirboll, and Payne 1996; Honig 1996). Latina immigrant women exemplify the broader societal and institutional biases they have grappled with (Zinn and Zambrana 2019), which subsequently cascade into their retirement choices and health outcomes.

While a substantial body of research has delved into the relationship between retirement timing and health, the results have been varied (Kim and Moen 2002; Ekerdt 2010). Some studies argue that early retirement can offer immediate physical and emotional health

benefits, given the decrease in work-related stress and an increase in leisure and exercise opportunities (Jokela et al. 2010; Westerlund et al. 2009). On the other hand, delaying retirement might safeguard health, as it can endow individuals with enhanced financial stability (Alavinia and Burdorf 2008; Dave, Rashad, and Spasojevic 2008). Yet, there are arguments suggesting that the timing of retirement might have only a marginal effect on how one's health responds post-retirement (Butterworth et al. 2006; van Solinge 2007). Furthermore, retiring around the culturally expected age might be the healthiest option, aligning the retirement experience with societal norms (Börsch-Supan, Brugiavini, and Croda 2009).

The findings from this study indicate a nuanced relationship between retirement timing and health. While the 'late' retirement pattern was consistently associated with improved health outcomes, suggesting that individuals might derive immense satisfaction from extended work engagement, thereby bolstering their mental health, the notion that early retirement is invariably beneficial was not substantiated. Surprisingly, the 'slightly early' retirement pattern correlated with declining health.

On the other hand, the 'early partial retirement' pattern demonstrated significant health benefits, especially in mitigating functional limitations. This underscores the importance of a longitudinal and holistic approach to studying retirement, embracing the subtleties of various retirement patterns. Engaging in part-time or flexible work even after initial retirement could be a key contributor to this positive health trend. Such engagement might not just bring about mental contentment but also ensure individuals are not in roles with strenuous physical demands.

These insights challenge occasional critiques against delayed retirement and emphasize the complex dynamics between retirement timing and health. They usher in an intriguing idea: exploring diverse forms of employment post the traditional retirement age could lead to enhanced health outcomes. Nevertheless, it's essential to consider these questions within broader stratification structures and policies, especially those related to immigration. As results show, these positive or negative correlations between retirement patterns and health

do not appear across all ethnoracial/nativity groups. As the U.S. metamorphoses into a diverse and multicultural tapestry, research of this nature gains paramount importance (Alba and Maggio 2022). Current social policies and retirement strategies, albeit thorough, might not wholly address the distinct experiences of Latin American immigrants or other social groups.

Embracing a holistic viewpoint that encapsulates an individual's entire life course can lead us past a rudimentary understanding of retirement patterns and health outcomes (O'Rand 2006). Such an outlook, aligned with broader theoretical frameworks, presents a renewed perspective on the intricate interplay of individual choices, societal norms, and institutional structures (Mayer 2009).

My study's broad scope and inclusive methodology lent itself to providing a comprehensive perspective on retirement patterns in diverse ethnoracial groups. However, I need to acknowledge the limitations of the study. Despite the best efforts, health outcomes were self-reported, which could be subject to bias or error (Greene, Harris, and Hollingsworth 2014; Johansson, Böckerman, and Lundqvist 2019). Furthermore, the study could not account for all possible factors influencing retirement patterns and health outcomes, such as comprehensive life course socioeconomic status measures, other lifestyle choices, and individual health histories. While this study provided insights into the retirement patterns of Latin American immigrants, the limited sample size poses a constraint. Given that Latin America comprises various nations, each with its unique socio-economic and cultural milieu, the sample might not have captured the complete spectrum of experiences and nuances of this diverse population (Bohon 2005; Guzman, Thomson, and Ryberg 2021). The conflation of distinct subgroups within Latin American immigrants can potentially oversimplify their varied retirement trajectories. Differences in background, such as an immigrant's specific country of origin or their socio-economic standing, could play a pivotal role in their retirement patterns and post-retirement health outcomes. Furthermore, inherent challenges in capturing every nuance, such as individual resilience (Pritzker and Minter 2014) factors or

specific coping strategies, could potentially affect the study's comprehensiveness. Thus, my results need to be interpreted with these limitations in mind.

Going forward, there are several promising avenues for future research. One such direction would be to conduct longitudinal studies focusing exclusively on immigrant populations and their health, capturing the dynamic nature of retirement patterns and their long-term implications for health and well-being with better and more representative samples. Another promising direction would be to seek a deeper understanding of individual experiences, motivations, cultural factors that influence retirement decisions, and subsequent health outcomes using other methodological techniques such as qualitative studies. Future studies could also explore the role of broader societal factors, such as labor market dynamics, social and immigration policies, and cultural influences, in shaping retirement patterns and their associations with health outcomes.

Delving deeper, a promising approach would be to employ retrospective life course research focused on immigrants. Such a technique involves garnering comprehensive data about individuals' histories—from early life events to their present circumstances (Morselli et al. 2016). This method is particularly salient for the study of immigrant populations, allowing a detailed examination of their pre-migration context, the nature and challenges of their migration journey, and their subsequent assimilation experiences in the host country. Understanding these dynamics can provide a richer texture to their retirement choices. For instance, charting the life trajectory of an immigrant who experienced severe economic adversities during their formative years might reveal a different lens through which they view retirement, as opposed to someone who immigrated primarily for educational pursuits. Additionally, the diverse backgrounds within the Latin American immigrant cohort would be more finely delineated through such a life course approach. By mapping these diverse experiences alongside retirement patterns, a layered understanding of the associations between past events, retirement decisions, and post-retirement health outcomes can be obtained. This life course perspective, enhanced with retrospective data collection, presents a holistic avenue

to fathom the depths of immigrant experiences in their retirement journey (Sander and Bell 2014).

In conclusion, by intertwining the individual experiences of Latin American immigrants with the expansive socio-political backdrop of the United States, this research extends invaluable insights for future endeavors and policy-making. It underscores the merit of a holistic approach, providing a novel perspective to decipher the intricate relationship between retirement patterns and health outcomes.

## CHAPTER 5

### CONCLUSION

In the course of this dissertation, I have endeavored to dissect the intersections of institutional forces and life course outcomes, contextualized within varying populations and environments. Each empirical chapter, with its distinct focus, has contributed to understanding the complex dynamics between social trajectories and health outcomes, providing a comprehensive look into how social institutions and policies exert influence over an individual's life course. The unique perspectives and findings from each chapter have jointly enriched and expanded the theoretical foundations and empirical applicability of the Institutional Life Course Framework I propose here.

Now, in this concluding chapter, I aim to fulfill a few key objectives. Firstly, after providing a general overview of the empirical chapters of this thesis I will discuss how the studies undertaken in this research inform and refine the Institutional Life Course Framework. Secondly, I will critically evaluate the limitations inherent to this research, providing an honest appraisal of where it stands. Thirdly, I will put forth a new research agenda that has been shaped and informed by the insights gleaned through this work and the limitations I faced. Lastly, I will draw together the strands of thought and analysis, presenting my concluding thoughts that encapsulate the essence of the entire dissertation. I invite the reader to view this chapter as a waypoint, rather than the end, in our exploration of the institutional life course—an exploration that promises continued growth in our understanding of how institutions shape our life trajectories and health.

#### 5.1 Overview

The first empirical study, presented in Chapter 2, presents an in-depth exploration of the health status of Latin American immigrants living in the United States. This study acknowledges and elaborates on the Hispanic Paradox literature (Abraído-Lanza, Chao, and

Flórez 2005; Palloni and Arias 2004; Beltrán-Sánchez et al. 2016; Palloni and Morenoff 2001), providing a fresh perspective by focusing on pre-migration conditions, specifically early-life exposure to political institutions and welfare generosity. The chapter discusses the impact of exposure to democratic regimes and welfare generosity during critical periods such as childhood on health outcomes, setting a precedent for future research.

Chapter 2 further investigates how country of origin and exposure at the destination interact and affect immigrants' health. The chapter suggests that the pre-migration characteristics of the home country continue to be relevant even after migration, influencing health status. This revelation prompts an exploration of how state-level characteristics within the United States interact with people's country-of-origin characteristics to impact health. Furthermore, it raises a relatively new question: how might the ongoing conditions in an immigrant's country of origin, while they are already residing in their host country, influence their health status from a distance (Sønderskov et al. 2021)?

In the second empirical chapter, the focus is on European women, specifically the interplay between work, family, and mental health. The study investigates how defamilialization policies and birth cohorts have contributed to variations in women's mental health outcomes. It dissects women's life trajectories across 14 European countries, offering a thorough analysis of the mental health outcomes associated with different life paths.

This chapter provides a comprehensive exploration of the intersection between work, family, and mental health, highlighting the importance of considering societal and historical contexts when analyzing mental health outcomes (Kikuzawa 2006; Druss 2002). This fresh perspective encourages further research into the impact of broader societal factors on individual mental health.

The third empirical chapter navigates through the retirement experiences of diverse ethnoracial groups in the United States. It emphasizes the intersectional influences on retirement patterns and health outcomes, particularly among Latine immigrants and women. This study challenges the societal structures and policies shaping work-retirement trajec-



tories, advocating for targeted interventions and policies promoting equitable and healthy aging experiences (Reichstadt et al. 2010).

The chapter addresses unique retirement patterns observed among different ethnoracial/nativity groups and the subsequent implications on their health. The findings underscore the need for policies that take into account intersecting structural positions to ensure health equity during retirement, and for taking into account how policy itself shapes those structural positions.

Collectively, these empirical chapters provide a comprehensive exploration of the intricate dynamics between social trajectories and health outcomes. They emphasize the need for recognizing the diversity of human experiences and the intersections of various social categories in shaping these experiences. They are a first step into the Institutional Life Course Framework I propose in this dissertation.

## **5.2 How do These Studies Inform the Institutional Life Course Framework?**

In the quest to comprehend the depths of health inequalities, in this dissertation, I propose an Institutional Life Course Framework. It contends that both structural and individual nuances unite to delineate health trajectories over one's lifetime. Institutions, from specific policies to broader and more complex policy arrangements, set forth the paths by which health is molded, as they delineate opportunities, constraints, and norms (Beckfield et al. 2015; Gkiouleka et al. 2018). As individuals traverse life's stages, each with its roles and risks, the timings of these transitions, and most importantly, combined with the historical context in which they take place, profoundly shape individuals' health (Elder, Johnson, and Crosnoe 2003; Fabbre 2016; Van Winkle and Fasang 2017; Blossfeld, Buchholz, and Hofäcker 2009).

In this dissertation, this understanding is illuminated by the examination of the health status of Latin American immigrants in the U.S. This exploration underlines that early-life

exposure to political institutions, such as democratic regimes, significantly influences health outcomes, affirming the need to historically situate individuals, aligning them with broader political settings (Angelini, Howdon, and Mierau 2019; Cheval et al. 2018; Surachman et al. 2019). This early-life exposure showcases that health outcomes are not just a product of immediate circumstances but are intricately woven tales of past environments and experiences (Arpino, Gumà, and Julià 2018; Chen et al. 2018; Ferraro and Shippee 2009; Ferraro, Shippee, and Schafer 2009; Brennan and Spencer 2014; Bartley and Plewis 2007; Graves and Nowakowski 2017; Cunningham et al. 2018; Dannefer 2003; Aitken et al. 2016; Carroll et al. 2017). In essence, the health of immigrants does not solely reflect their current position in the stratification structure but also carries the echoes of their past, emphasizing the non-linear nature of the life journey proposed by the Institutional Life Course Framework.

Further complexity is added by dissecting women's life trajectories across European countries. This study lends weight to the argument that a life course perspective is enriched by analyzing individuals within broader historical-institutional landscapes (Elder Jr. 1998; Bambra, Eikemo, and Kunst 2010). The interplay of defamilialization policies, societal shifts, and birth cohorts, as highlighted in the research, captures the dynamism of institutional exposure based on factors like birth cohort and societal changes. Such findings anchor the dynamic interplay between institutions, life courses, and health disparities.

In addition, the third empirical chapter on retirement trajectories resonates with the framework's emphasis on confronting health disparities at their roots. Exploring the varying retirement patterns of different ethnoracial/nativity groups in the U.S. and the subsequent implications on their health, this chapter elevates the importance of acknowledging temporal dynamics within stratification systems. It invites scholars and policymakers to discern how individuals are influenced by evolving systems they encounter throughout their lives, carefully situating these systems within their ever-shifting historical contexts. Immigration systems, as part of the 'rules of the game' (Beckfield et al. 2015), create opportunities and limitations thus affecting the way immigrants can unfold their retirement trajectories and the effects

they might have on their health.

To leverage the full potential of the Institutional Life Course Framework, there is a pivotal need to perceive political institutions, like welfare states, as entities that are in flux (Abbott and DeViney 1992). These entities, as the empirical studies emphasize, are in constant evolution, molded by political, cultural, and societal transitions. For example, the revelation that the exposure of individuals' to their home country characteristics depends on their birth cohort and year of migration, and that they continue to resonate even after migration, reinforces the idea that institutions are not stagnant but are impacted by both their histories and present dynamics. Moreover, the results presented in Chapter 4 underscore the necessity for better and larger immigrants' samples to be included in the analysis, enabling a more comprehensive understanding of how institutional changes in immigration policies and other factors shape the life courses of foreign-born individuals. This expanded sampling approach will aid in capturing a clearer picture of the intricate interplay between evolving institutions and the trajectories of immigrant experiences.

The insights this perspective offers calls us to look beyond comparative cross-sectional research and delve into longitudinal studies within singular political entities undergoing considerable temporal changes. These investigations present compelling evidence of the nuanced interrelation between personal and historical time. They invite future scholarship to dive deeper, exploring not just the immediate determinants of health but the intertwined historical, societal, and individual narratives that shape it.

In wrapping, the studies of this dissertation amplifies the scope of the Institutional Life Course Framework. They urge a systematic integration of political sociology with population health and advocate for recognizing both the past circumstances and the evolving contexts shaping health disparities. Through this synthesis, the empirical chapters breathe life into the framework, providing nuanced contours and textures, ensuring it remains a living, evolving tool for future explorations into the realm of health.

### 5.3 Limitations

Within the extensive field of academic research, it is wise to consider the boundaries and inherent limitations of our work. This dissertation, while paving new pathways in understanding health disparities through the lens of the Institutional Life Course Framework, is not without its constraints.

Firstly, the empirical foundation of this dissertation is rooted in specific demographic realms: Latin American immigrants in the U.S., European women, and diverse ethnoracial groups during retirement. While these studies shine a focused light on the intricacies of their health outcomes, they might not universally resonate. Their deep dives, though invaluable, might not fully mirror the complexities of broader, heterogeneous populations. To combat this, future research can broaden its empirical scope to encompass a more diverse range of demographics, or even consider meta-analytical approaches that can synthesize findings from multiple studies.

History is vast and multifaceted. While the framework I present here acknowledges its essential role, capturing the intricate interplay between historical influences and individual life trajectories remains a monumental task. There's a risk of inadvertently overlooking vital historical nuances or perhaps underestimating the impact of certain epochal shifts. Collaborations with scholars dedicated to understanding social change throughout history, and the adoption of interdisciplinary methodologies, can be pivotal in ensuring historical contexts are both accurately and comprehensively integrated (Klein 1991; Gooch, Vasalou, and Benton 2017; Ljungqvist, Seim, and Huhtamaa 2020). Such collaborations are vital for accurately collecting historical data, which in turn facilitates comparative research.

The dynamism of institutions, a central tenet of the framework I push forward here, presents its challenges. Institutions are not monolithic; they breathe and evolve, subtly shifting with the tides of societal norms and political landscapes (Abbott and DeViney 1992). However, portraying this dynamism, especially the nuanced transitions, remains an intricate endeavor. Regular revisions and iterative development of the framework, bolstered

by updated data and innovative methods, might help capture these evolving dynamics more efficiently.

While we have delved deep into intersecting social categories, the myriad dimensions of human identity continually expand our understanding. Aspects such as gender identity, sexual orientation, and disability status (Nakkeeran and Nakkeeran 2018), among many others, might wield influence on health outcomes, and their potential intersectionality remains an area for future exploration. Collaborative research with experts in these fields can further strengthen and deepen our grasp of these intricacies.

My research heavily leans on quantitative methodologies. Therefore, I must acknowledge the potential oversight of qualitative nuances. Numbers, while powerful, might not always encapsulate the richness of personal narratives or the texture of lived experiences, particularly when what is under study are individuals' life histories (Shacklock and Thorp 2005). Hence, a mixed-methods approach, incorporating both qualitative and quantitative methodologies, could offer a holistic understanding and ensure depth is not sacrificed for breadth (Johnson, Onwuegbuzie, and Turner 2007). Consider my chapter on retirement patterns of Latin American immigrants in the U.S. Using sequence analysis on longitudinal data, I discerned distinct patterns of retirement and subsequently examined how these correlated with health outcomes. The quantitative data revealed, for example, that particular retirement patterns associate with poorer health outcomes in later years.

However, a strictly quantitative approach might leave us questioning: Why are these immigrants following this retirement pattern? What are the socioeconomic, cultural, or personal reasons behind these (constrained) choices? And, importantly, why does this pattern lead to poorer health outcomes?

A mixed-methods approach would allow for the incorporation of qualitative research to explore these questions. By conducting in-depth interviews or focus groups with a subset of these immigrants, we could unearth deeper insights into their retirement decision-making processes. They might reveal complex cultural expectations around familial care in retire-

ment, experiences of discrimination or barriers in accessing retirement resources, or personal narratives about the challenges of aging in a country different from their place of birth. These qualitative insights would provide context to the quantitative findings, making the correlations between retirement patterns and health outcomes not just evident, but deeply understood. Moreover, it can shed light on potential interventions or policy recommendations by understanding the lived experiences and challenges behind the statistical patterns.

My research, centered on health disparities addressing structural and institutional determinants, carries an inherently practical component: it serves as a critical input for policy-making processes, advocating for change. I actively seek to embrace this practical dimension in my work. However, the bridge between scholarly insights and real-world policy is often fraught with challenges (Kowarsch et al. 2016). The academic realm, with its rigor, might produce robust recommendations, but translating these into tangible policy actions in the diverse and complex real world remains uncertain. To bridge this gap, increased engagement with policymakers and stakeholders during the research process can foster a clearer understanding of actionable insights.

The geographical canvas of the empirical chapters reflecting the framework I propose might also pose limitations. While it finds resonance in certain geopolitical contexts, regions such as Sub-Saharan Africa with its unique post-colonial trajectories, the Middle East with its intricate socio-political and religious fabric, or East Asia with its distinct cultural and historical ethos might present challenges that my framework does not wholly anticipate (Burawoy 2009). For instance, societal norms in East Asia around aging and familial responsibilities might influence health disparities differently than in Western contexts or Latin America. Similarly, the complex interplay of religion, politics, and socioeconomic structures in the Middle East may have implications not covered by my initial framework. Expanding research to other regions of the world, ideally collaborating with scholars from varied geographic backgrounds, can offer a more holistic viewpoint, mitigating the risks of regional bias.

Moreover, the unpredictable nature of societal progress, whether it is rapid technological advancements or unforeseen global events, can pivotally shift life courses and institutional interplays. The framework, while robust now, might require adaptive recalibrations to stay relevant. Periodic reviews and the incorporation of the analysis of supra- or international institutions and their relationship with health and health distribution around the world might be a good strategy in a rapidly globalized world (Blossfeld, Buchholz, and Hofäcker 2009).

Additionally, the complex mosaic of individual experiences often defies complete encapsulation within structured frameworks. The theoretical framework I introduce here is not exempt from the longstanding structure/agency debate in sociology (Shilling 1997). Similarly, the debate between methodological individualism and more holistic or structural perspectives persists (Udéhén 2002). Personal narratives, distinct life events, and familial histories may intersect with institutional dynamics in unpredictable ways. The Institutional Life Course Framework presented here aligns more closely with ‘structuration theories’ (Shilling 1997), which are characteristic of theories that seek to reconcile social action. These theories posit that while individual agency is significantly shaped by structuring social structures, it is not entirely predetermined. Therefore, a flexible integration of narrative approaches with this structured framework can yield deeper, multidimensional insights.

In conclusion, while the Institutional Life Course Framework offers invaluable insights, it is essential to approach it with a discerning eye, understanding its boundaries. Such self-awareness not only lends credibility but also casts a guiding light for future scholars to traverse this academic landscape with enriched perspectives and refined tools.

## **5.4 Paving the Way to a New Research Agenda**

This dissertation casts an analytical eye over the intricate web of health disparities, with a focus on specific but varying populations. This choice is influenced by data availability and some path dependency in my dissertation work. As mentioned at the outset of this thesis, the Institutional Life Course Framework may be apt for studying various popula-

tions. My future research will concentrate on two minority populations in the United States: LGBT individuals and migrants. The unique challenges these populations face present a rich backdrop for in-depth academic exploration.

Historical and institutional contexts undeniably influence the health and well-being of both LGBT and migrant individuals (Bakhtiari 2018; Hatzenbuehler, Flores, and Gates 2017). A study that goes beyond mere dates and events to grasp deeper societal shifts, especially those marked by socio-cultural movements or policy changes, can provide a nuanced understanding of their life courses. Within the broad categories of LGBT and migrant populations, there are numerous intersecting experiences. For example, the life trajectory of a gay man born in 1945 might differ significantly from that of a gay man born in 1985. Likewise, the life journey of a migrant from Perú born in 1950 could be quite different from that of a migrant from Brazil in 2010. Delving into these nuances can reveal the complex health disparities often obscured within broad categories.

The mental and physical well-being of these groups is crucial. The Institutional Life Course Framework provides a valuable perspective to trace how various institutional interactions, not just at the national or state level but also in healthcare, workplaces, and educational settings, can either amplify or alleviate health disparities. These disparities are further shaped by evolving policies that either protect or neglect these groups (Hatzenbuehler, Keyes, and Hasin 2009; Giannoni, Franzini, and Masiero 2016). Such a policy-focused exploration can yield both academic insights and actionable guidelines for policymakers to develop more inclusive strategies. A dynamic approach to understanding the evolution of these policies and their significance at different life stages will enhance our grasp of health disparities.

Leveraging the historical and state-level variations in LGBT-related policies in the United States, I aim to reconstruct the life histories of older LGBT individuals, focusing on their exposure to these institutional shifts and their subsequent health outcomes. I will gather retrospective data on older LGBT adults, piecing together their residential histories and collecting state- and city-level data to reconstruct their exposure histories. To truly



understand the health disparities of this group, a mere snapshot of the present won't suffice; we must delve into the past, especially given the rapidly changing institutional context concerning this population.

Similarly, by exploiting the historical and country-level variations in immigrants' countries of origin, as well as the historical and state-level variations in immigrants' places of residence, I plan to delve deeper into the research presented in Chapter 2. I will also gather retrospective data on immigrants' life histories. Obtaining prospective data on immigrants' life histories is nearly unfeasible due to the need to collect data from numerous countries and a limited selection of potential immigrants. However, gathering retrospective data on immigrants who have already migrated allows for a more comprehensive understanding of institutional variations based on country of origin and birth cohort.

By highlighting these research paths, this dissertation seeks to establish a foundation for a specialized study area within the broader health disparities domain. Guided by the Institutional Life Course Framework, I aim to explore and amplify the experiences of those often pushed to the periphery. The ultimate goal is an inclusive vision where every individual's life journey is not just recognized but deeply understood and valued.

## 5.5 Final Thoughts

Embarking on this scholarly journey, the core ambition was to illuminate the intricate web of determinants that converge to shape health disparities. From the rich tapestry of Latin American immigrants to the unique trajectories of European women, and the challenges faced by diverse ethnoracial groups in the United States, this dissertation has traversed varied landscapes. Central to this exploration has been the Institutional Life Course Framework, serving as a beacon, guiding the interrogation of how institutions, histories, and individual paths intersect to mold health outcomes.

What stands out is the undeniable significance of acknowledging the dynamic interplay of individual experiences with broader historical and institutional contexts. Every person's

health trajectory is a reflection of not just their individual choices or genetic predispositions but also the institutions they interact with, the policies they are governed by, and the historical epochs they live through. The nuanced experiences of LGBT and migrant populations have further accentuated the need to delve deeper, to understand those often at the peripheries of broad health narratives.

As we reflect on these findings, the real-world implications beckon. Addressing health disparities is not solely the realm of healthcare professionals. It demands the concerted efforts of policymakers, educators, community leaders, and individuals. The narratives and data shared in this dissertation are a testament to the ripple effects of policies, both past and present.

However, beyond the data, the models, and the frameworks lies the simple truth: every individual deserves a life of health and well-being, unmarred by structural inequities. If there is one takeaway from this dissertation, it is the hope that as we move forward, the insights gained here serve as stepping stones for a world where health disparities are not just studied but actively bridged.

In concluding, it is essential to remember that the journey does not end here. Every conclusion generates new questions, every answer uncovers new complexities. The quest for understanding health disparities, championing the marginalized, and crafting a more equitable world is a continuous endeavor. And as scholars, policymakers, and compassionate beings, it is a responsibility we must shoulder with both dedication and humility.

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APPENDIX A  
APPENDIX OF CHAPTER 2

Table A.1: Regression model: Welfare generosity - health spending

	Model 1A	Model 2A	Model 3A	Model 4A	Model 5A
<b>Health spending (% of GDP) (std)</b>	0.070 (0.041)	0.073 (0.045)	0.003 (0.032)	0.004 (0.029)	-0.007 (0.030)
<b>GDP per capita (2000 USD) (std)</b>	0.122*** (0.019)	0.145*** (0.020)	0.260*** (0.028)	0.288*** (0.030)	0.195* (0.077)
<b>Age group (ref = 18-34)</b>					
35 - 49	-0.099 (0.077)	-0.103 (0.076)	-0.071 (0.069)	-0.076 (0.070)	-0.019 (0.053)
≥ 50	-0.257** (0.094)	-0.275** (0.098)	-0.215** (0.078)	-0.232** (0.083)	-0.133 (0.073)
Year of migration	0.035*** (0.001)	0.035*** (0.001)	0.046*** (0.005)	0.046*** (0.005)	0.038*** (0.003)
<b>Female (ref = male)</b>					
<b>Educ. attainment (ref = no formal educ.)</b>					
Less than primary		0.069 (0.091)		0.067 (0.090)	0.059 (0.091)
Less than high school		0.155 (0.085)		0.151 (0.084)	0.142 (0.085)
High school or equivalent		0.208* (0.097)		0.205* (0.096)	0.196* (0.096)
More than high school		0.428*** (0.099)		0.425*** (0.098)	0.419*** (0.099)
<b>Marital status (ref = single)</b>					
Married		0.022 (0.023)		0.026 (0.022)	0.036 (0.021)
Separated/Divorced		-0.054 (0.058)		-0.049 (0.057)	-0.037 (0.055)
Widowed		-0.085 (0.103)		-0.075 (0.102)	-0.064 (0.102)
<b>Income (logged)</b>		0.096*** (0.016)		0.097*** (0.016)	0.098*** (0.016)
<b>Citizenship status (Naturalized)</b>		0.157*** (0.011)		0.156*** (0.011)	0.156*** (0.011)
<b>Health spending * GDPpc</b>			0.142*** (0.033)	0.146*** (0.031)	0.097*** (0.026)
<b>Educational spending (% of GDP) (std)</b>					-0.009 (0.040)
<b>Autocracy/Democracy</b>					0.152** (0.052)
Cut point 1	63.945 (1.921)	63.951 (2.585)	86.093 (8.960)	86.773 (9.033)	70.806 (6.386)
Cut point 2	65.849 (1.917)	65.859 (2.586)	87.997 (8.968)	88.681 (9.045)	72.714 (6.373)
Cut point 3	68.098 (1.909)	68.125 (2.576)	90.246 (8.982)	90.948 (9.064)	74.982 (6.374)
Cut point 4	69.603 (1.910)	69.648 (2.582)	91.752 (8.976)	92.471 (9.058)	76.506 (6.374)
<i>N</i>			55,910		

Standard errors in parentheses

\*  $p < 0.05$ , \*\*  $p < 0.01$ , \*\*\*  $p < 0.001$

All models include country, survey-year and region fixed effects, and country-year of migration linear trends.

Table A.2: Regression model: Welfare generosity - educational spending

	Model 1A	Model 2A	Model 3A	Model 4A	Model 5A
<b>Educational spending (% of GDP) (std)</b>	0.047 (0.090)	0.056 (0.091)	0.055 (0.056)	0.065 (0.057)	0.007 (0.034)
<b>GDP per capita (2000 USD) (std)</b>	0.059 (0.100)	0.073 (0.097)	0.045 (0.074)	0.059 (0.070)	0.075 (0.058)
<b>Age group (ref = 18-34)</b>					
35 - 49	-0.123 (0.069)	-0.126 (0.067)	-0.105 (0.069)	-0.108 (0.067)	-0.026 (0.055)
≥ 50	-0.295*** (0.084)	-0.310*** (0.086)	-0.275** (0.085)	-0.291*** (0.087)	-0.146 (0.077)
Year of migration	0.038*** (0.001)	0.037*** (0.002)	0.044*** (0.004)	0.044*** (0.005)	0.033*** (0.004)
<b>Female (ref = male)</b>					
<b>Educ. attainment (ref = no formal educ.)</b>					
Less than primary		0.069 (0.092)		0.067 (0.091)	0.059 (0.091)
Less than high school		0.156 (0.086)		0.153 (0.085)	0.143 (0.086)
High school or equivalent		0.210* (0.098)		0.207* (0.096)	0.196* (0.096)
More than high school		0.429*** (0.100)		0.426*** (0.098)	0.419*** (0.099)
<b>Marital status (ref = single)</b>					
Married		0.017 (0.021)		0.021 (0.023)	0.035 (0.021)
Separated/Divorced		-0.059 (0.056)		-0.056 (0.056)	-0.039 (0.055)
Widowed		-0.091 (0.103)		-0.086 (0.104)	-0.068 (0.102)
<b>Income (logged)</b>		0.096*** (0.016)		0.096*** (0.016)	0.098*** (0.016)
<b>Citizenship status (Naturalized)</b>		0.157*** (0.011)		0.156*** (0.011)	0.157*** (0.011)
<b>Educational spending * GDPpc</b>			0.092* (0.042)	0.092* (0.040)	0.033 (0.032)
<b>Health spending (% of GDP) (std)</b>					0.022 (0.025)
<b>Autocracy/Democracy</b>					0.170*** (0.050)
Cut point 1	69.667 (3.069)	69.392 (3.726)	83.167 (8.340)	83.092 (9.319)	60.663 (7.956)
Cut point 2	71.571 (3.054)	71.299 (3.721)	85.071 (8.349)	85.000 (9.332)	62.571 (7.947)
Cut point 3	73.820 (3.020)	73.566 (3.699)	87.319 (8.362)	87.267 (9.347)	64.839 (7.937)
Cut point 4	75.324 (3.028)	75.088 (3.707)	88.825 (8.366)	88.789 (9.351)	66.363 (7.948)
<i>N</i>			55,910		

Standard errors in parentheses

\*  $p < 0.05$ , \*\*  $p < 0.01$ , \*\*\*  $p < 0.001$

All models include country, survey-year and region fixed effects, and country-year of migration linear trends.

Table A.3: Regression model: Democratic expansion - autocracy/democracy

	Model 3A	Model 3B	Model 3C	Model 3D	Model 3E
<b>Autocracy/Democracy</b>	0.176** (0.056)	0.190** (0.058)	0.200*** (0.042)	0.215*** (0.044)	0.214*** (0.046)
<b>GDP per capita (2000 USD) (std)</b>	0.050 (0.039)	0.070 (0.037)	0.044 (0.029)	0.064* (0.026)	0.079 (0.061)
<b>Age group (ref = 18-34)</b>					
35 - 49	-0.034 (0.049)	-0.034 (0.050)	-0.029 (0.051)	-0.029 (0.052)	-0.029 (0.057)
≥ 50	-0.145* (0.071)	-0.153* (0.074)	-0.142* (0.070)	-0.149* (0.073)	-0.150 (0.083)
Year of migration	0.032*** (0.002)	0.031*** (0.002)	0.032*** (0.002)	0.032*** (0.002)	0.032*** (0.002)
<b>Female (ref = male)</b>	-0.144*** (0.021)	-0.144*** (0.021)	-0.144*** (0.021)	-0.144*** (0.021)	-0.144*** (0.021)
<b>Educ. attainment (ref = no formal educ.)</b>					
Less than primary	0.059 (0.092)	0.059 (0.092)	0.060 (0.092)	0.060 (0.092)	0.060 (0.091)
Less than high school	0.143 (0.086)	0.143 (0.086)	0.143 (0.086)	0.143 (0.086)	0.143 (0.086)
High school or equivalent	0.197* (0.097)	0.197* (0.097)	0.197* (0.096)	0.197* (0.096)	0.197* (0.096)
More than high school	0.419*** (0.100)	0.419*** (0.100)	0.420*** (0.100)	0.420*** (0.100)	0.420*** (0.100)
<b>Marital status (ref = single)</b>					
Married	0.034 (0.020)	0.034 (0.020)	0.035 (0.028)	0.035 (0.020)	0.035 (0.021)
Separated/Divorced	-0.041 (0.054)	-0.041 (0.054)	-0.039 (0.054)	-0.039 (0.054)	-0.039 (0.055)
Widowed	-0.071 (0.102)	-0.071 (0.102)	-0.067 (0.102)	-0.067 (0.102)	-0.067 (0.102)
<b>Income (logged)</b>	0.098*** (0.016)	0.098*** (0.016)	0.098*** (0.016)	0.098*** (0.016)	0.098*** (0.016)
<b>Citizenship status (Naturalized)</b>	0.157*** (0.011)	0.157*** (0.011)	0.156*** (0.011)	0.156*** (0.011)	0.156*** (0.011)
<b>Autocracy/Democracy * GDPpc</b>			0.035 (0.028)	0.037 (0.027)	0.036 (0.037)
<b>Educational spending (% of GDP) (std)</b>					
<b>Health spending (% of GDP) (std)</b>					
Cut point 1	57.939 (3.747)	57.351 (3.717)	58.775 (4.595)	58.180 (4.068)	58.189 (3.963)
Cut point 2	59.843 (3.734)	59.259 (3.707)	60.679 (4.590)	60.087 (4.066)	60.097 (3.933)
Cut point 3	62.092 (3.741)	61.526 (3.711)	62.928 (4.613)	62.355 (4.090)	62.365 (3.913)
Cut point 4	63.598 (3.746)	63.050 (3.719)	64.434 (4.611)	63.879 (4.091)	63.889 (3.913)
<i>N</i>	55,910				

Standard errors in parentheses

\*  $p < 0.05$ , \*\*  $p < 0.01$ , \*\*\*  $p < 0.001$

All models include country, survey-year and region fixed effects, and country-year of migration linear trends.

Table A.4: Regression model: All variables

Model 4	
<b>Health spending (% of GDP) (std)</b>	0.031 (0.026)
<b>Educational spending (% of GDP) (std)</b>	-0.005 (0.047)
<b>Autocracy/Democracy</b>	0.177*** (0.051)
<b>GDP per capita (2000 USD) (std)</b>	0.088 (0.066)
<b>Age group (ref = 18-34)</b>	
35 - 49	-0.027 (0.056)
≥ 50	-0.143 (0.079)
Year of migration	0.030*** (0.002)
<b>Female (ref = male)</b>	-0.144*** (0.021)
<b>Educ. attainment (ref = no formal educ.)</b>	
Less than primary	0.060 (0.092)
Less than high school	0.143 (0.086)
High school or equivalent	0.197* (0.096)
More than high school	0.420*** (0.100)
<b>Marital status (ref = single)</b>	
Married	0.035 (0.021)
Separated/Divorced	-0.039 (0.055)
Widowed	-0.068 (0.102)
<b>Income (logged)</b>	0.098*** (0.016)
<b>Citizenship status (Naturalized)</b>	0.157*** (0.011)
Cut point 1	54.805 (3.084)
Cut point 2	56.713 (3.068)
Cut point 3	58.980 (3.053)
Cut point 4	60.504 (3.062)
<i>N</i>	55,910

Standard errors in parentheses

\*  $p < 0.05$ , \*\*  $p < 0.01$ , \*\*\*  $p < 0.001$ 

All models include country, survey-year and region fixed effects, and country-year of migration linear trends.



APPENDIX B  
APPENDIX OF CHAPTER 4

Table B.1: Regression model: Self-rated health (poor)

	Model 1	Model 2	Model 3	Model 4	Model 5
Self-rated health (poor)					
<b>Retirement pattern (ref = Slightly early)</b>					
Late	-0.875*** (0.064)	-0.877*** (0.066)	-0.602*** (0.086)	-0.384*** (0.092)	-0.339*** (0.097)
Early partial retirement	-1.081*** (0.102)	-0.969*** (0.103)	-0.616*** (0.129)	-0.444** (0.136)	-0.358* (0.143)
Mostly out	0.175* (0.086)	0.065 (0.094)	0.043 (0.143)	0.170 (0.155)	0.165 (0.166)
Part-time work to retirement	-0.532*** (0.109)	-0.614*** (0.115)	-0.439** (0.149)	-0.201 (0.159)	-0.121 (0.167)
Traditional	-0.106 (0.112)	-0.694*** (0.127)	-0.565** (0.179)	-0.281 (0.192)	-0.170 (0.206)
Full-time work to partial retirement	-0.223 (0.375)	-1.353*** (0.389)	-1.420** (0.536)	-1.222* (0.584)	-0.918 (0.601)
<b>Ethnoracial/nativity group (ref = latine immigrant)</b>					
native-born latine		-0.897*** (0.144)	-0.735*** (0.202)	-0.634** (0.221)	-0.603* (0.235)
non-latine black		-0.878*** (0.116)	-0.636*** (0.171)	-0.630*** (0.188)	-0.690*** (0.201)
non-latine white		-1.589*** (0.103)	-1.072*** (0.159)	-0.884*** (0.175)	-0.866*** (0.186)
<b>Gender (ref = Male)</b>					
Female		-0.124* (0.055)	-0.207* (0.083)	-0.212* (0.089)	-0.202* (0.095)
<b>Parent's education (years)</b>					
Childhood traumatic events (ref = None)					
One			-0.036** (0.011)	-0.024* (0.012)	-0.026* (0.013)
Two			0.127 (0.087)	0.065 (0.094)	0.089 (0.099)
Three			-0.049 (0.171)	-0.099 (0.186)	-0.048 (0.193)
<b>Educational attainment (&lt;12 years)</b>					
12 years			-0.595 (0.520)	-0.633 (0.566)	-0.886 (0.590)
>12 years			-0.659*** (0.094)	-0.434*** (0.102)	-0.381*** (0.108)
<b>CES-D (0-8)</b>			-0.796*** (0.107)	-0.466*** (0.116)	-0.445*** (0.123)
<b>Longest job (ref = never worked)</b>			0.384*** (0.018)	0.334*** (0.019)	0.324*** (0.020)
Prof/managerial			-0.408 (0.226)	-0.305 (0.250)	-0.401 (0.272)
Sales/clerical			-0.297 (0.223)	-0.167 (0.247)	-0.291 (0.268)
Service			-0.029 (0.225)	0.070 (0.249)	-0.040 (0.272)
Manual			-0.123 (0.222)	-0.062 (0.246)	-0.176 (0.268)
<b>Heavy drinker (ref = No)</b>			-0.498*** (0.109)	-0.368** (0.115)	-0.318** (0.121)
<b>Smoker (ref = No)</b>					
In the past			0.282*** (0.076)	0.281*** (0.081)	0.275** (0.086)
Current			0.645*** (0.109)	0.654*** (0.117)	0.671*** (0.125)
<b>Self-rated health (poor) at t=1</b>			1.910*** (0.081)	1.910*** (0.081)	1.859*** (0.086)
<b>Allostatic load</b>					
<b>Constant</b>	-0.756*** (0.076)	0.717*** (0.128)	0.190 (0.281)	-0.770* (0.313)	-1.037** (0.344)
Observations	8630	8630	6459	6457	5829

Standard errors in parentheses

\*  $p < 0.05$ , \*\*  $p < 0.01$ , \*\*\*  $p < 0.001$

All models include outcome-survey-year fixed effects.

Table B.2: Regression model: CVD

	Model 1	Model 2	Model 3	Model 4	Model 5
<b>CVD</b>					
<b>Retirement pattern (ref = Slightly early)</b>					
Late	-0.442*** (0.058)	-0.470*** (0.058)	-0.416*** (0.070)	-0.262** (0.086)	-0.288** (0.091)
Early partial retirement	-0.283*** (0.081)	-0.325*** (0.082)	-0.179 (0.094)	-0.101 (0.118)	-0.118 (0.124)
Mostly out	-0.420*** (0.092)	-0.188 (0.097)	-0.153 (0.134)	-0.228 (0.174)	-0.433* (0.193)
Part-time work to retirement	-0.669*** (0.110)	-0.479*** (0.113)	-0.403** (0.131)	-0.242 (0.159)	-0.299 (0.169)
Traditional	-0.582*** (0.120)	-0.569*** (0.135)	-0.466** (0.177)	-0.297 (0.217)	-0.264 (0.233)
Full-time work to partial retirement	-1.806** (0.604)	-1.632** (0.611)	-1.614* (0.758)	-1.520 (1.035)	-1.478 (1.040)
<b>Ethnoracial/nativity group (ref = latine immigrant)</b>					
native-born latine		0.068 (0.159)	0.232 (0.211)	0.257 (0.272)	0.240 (0.288)
non-latine black		0.305* (0.128)	0.491** (0.180)	0.418 (0.231)	0.378 (0.246)
non-latine white		0.309** (0.114)	0.649*** (0.169)	0.556* (0.217)	0.612** (0.230)
<b>Gender (ref = Male)</b>					
Female		-0.392*** (0.051)	-0.467*** (0.068)	0.009 (0.012)	0.002 (0.013)
<b>Parent's education (years)</b>					
<b>Childhood traumatic events (ref = None)</b>					
One			0.084 (0.073)	0.051 (0.092)	0.042 (0.097)
Two			0.214 (0.138)	0.094 (0.177)	0.131 (0.185)
Three			0.121 (0.455)	-1.345 (1.046)	-1.160 (1.051)
<b>Educational attainment (&lt;12 years)</b>					
12 years			-0.077 (0.088)	-0.058 (0.111)	0.003 (0.118)
>12 years			-0.184 (0.098)	-0.160 (0.123)	-0.080 (0.131)
<b>CES-D (0-8)</b>					
Longest job (ref = never worked)			0.152*** (0.015)	0.147*** (0.019)	0.145*** (0.020)
Prof/managerial			-0.049 (0.212)	-0.093 (0.271)	-0.202 (0.291)
Sales/clerical			-0.181 (0.210)	-0.219 (0.270)	-0.392 (0.290)
Service			-0.092 (0.215)	-0.171 (0.276)	-0.283 (0.297)
Manual			-0.085 (0.210)	-0.107 (0.270)	-0.250 (0.290)
Heavy drinker (ref = No)			-0.414*** (0.086)	-0.399*** (0.108)	-0.329** (0.113)
Smoker (ref = No)					
In the past			0.163** (0.062)	0.119 (0.078)	0.102 (0.082)
Current			0.028 (0.099)	0.062 (0.122)	-0.079 (0.134)
<b>Allostatic load</b>					
Constant	-0.614*** (0.073)	-0.715*** (0.134)	-1.233*** (0.273)	-1.866*** (0.351)	-2.006*** (0.378)
Observations	8640	8640	6464	5621	5072

Standard errors in parentheses

\*  $p < 0.05$ , \*\*  $p < 0.01$ , \*\*\*  $p < 0.001$

All models include outcome-survey-year fixed effects.

Models 4 and 5 consider only cases that had never been diagnosed with CVD at age 60-61.

Table B.3: Regression model: High blood pressure

	Model 1	Model 2	Model 3	Model 4	Model 5
High blood pressure					
<b>Retirement pattern (ref = Slightly early)</b>					
Late	-0.195*** (0.055)	-0.152** (0.055)	-0.100 (0.064)	-0.041 (0.083)	-0.044 (0.088)
Early partial retirement	-0.373*** (0.077)	-0.316*** (0.077)	-0.257** (0.087)	-0.301* (0.118)	-0.280* (0.124)
Mostly out	-0.099 (0.086)	-0.101 (0.091)	-0.166 (0.123)	-0.073 (0.154)	-0.000 (0.162)
Part-time work to retirement	-0.270** (0.095)	-0.340*** (0.099)	-0.314** (0.113)	-0.132 (0.142)	-0.124 (0.150)
Traditional	0.682*** (0.126)	-0.054 (0.143)	-0.046 (0.184)	-0.007 (0.228)	-0.147 (0.249)
Full-time work to partial retirement	-0.531 (0.338)	-0.751* (0.346)	-0.538 (0.422)	-0.416 (0.530)	-0.170 (0.552)
<b>Ethnoracial/nativity group (ref = latine immigrant)</b>					
native-born latine		-0.056 (0.148)	0.054 (0.189)	0.019 (0.229)	-0.139 (0.244)
non-latine black		0.563*** (0.126)	0.888*** (0.169)	0.354 (0.207)	0.334 (0.222)
non-latine white		-0.379*** (0.105)	-0.024 (0.148)	-0.255 (0.181)	-0.243 (0.193)
<b>Gender (ref = Male)</b>					
Female		-0.007 (0.049)	-0.074 (0.064)	0.104 (0.084)	0.105 (0.089)
<b>Parent's education (years)</b>					
<b>Childhood traumatic events (ref = None)</b>					
One			-0.036*** (0.009)	-0.036** (0.011)	-0.038** (0.012)
Two					
Three			-0.115 (0.069)	-0.188* (0.092)	-0.143 (0.097)
<b>Educational attainment (&lt;12 years)</b>					
12 years			-0.177 (0.135)	-0.129 (0.177)	-0.008 (0.184)
>12 years			0.608 (0.565)	-0.425 (0.879)	-0.089 (0.932)
<b>Longest job (ref = never worked)</b>					
Prof/managerial			-0.130 (0.087)	-0.099 (0.111)	-0.082 (0.118)
Sales/clerical			-0.218* (0.094)	-0.139 (0.122)	-0.090 (0.129)
Service			0.094*** (0.016)	0.047* (0.021)	0.045* (0.022)
Manual			0.054 (0.204)	0.250 (0.265)	0.234 (0.283)
<b>Heavy drinker (ref = No)</b>			0.090 (0.202)	0.189 (0.262)	0.147 (0.281)
<b>Smoker (ref = No)</b>			0.154 (0.208)	0.200 (0.269)	0.132 (0.288)
In the past			0.077 (0.204)	0.251 (0.265)	0.205 (0.283)
Current			0.007 (0.076)	0.011 (0.098)	0.044 (0.103)
<b>Allostatic load</b>					
Constant	0.248*** (0.068)	0.498*** (0.124)	0.448 (0.253)	-0.617 (0.325)	-0.759* (0.352)
Observations	8640	8640	6464	3846	3462

Standard errors in parentheses

\*  $p < 0.05$ , \*\*  $p < 0.01$ , \*\*\*  $p < 0.001$

All models include outcome-survey-year fixed effects.

Models 4 and 5 consider only cases that had never been diagnosed with High blood pressure at age 60-61.

Table B.4: Regression model: Diabetes

	Model 1	Model 2	Model 3	Model 4	Model 5
Diabetes					
<b>Retirement pattern (ref = Slightly early)</b>					
Late	-0.291*** (0.062)	-0.259*** (0.063)	-0.198** (0.075)	-0.137 (0.095)	-0.155 (0.104)
Early partial retirement	-0.372*** (0.091)	-0.269*** (0.093)	-0.120 (0.106)	0.023 (0.129)	0.031 (0.141)
Mostly out	0.157 (0.092)	0.191 (0.099)	0.005 (0.139)	-0.061 (0.178)	0.044 (0.192)
Part-time work to retirement	-0.477*** (0.116)	-0.467*** (0.121)	-0.339* (0.139)	-0.164 (0.170)	-0.134 (0.182)
Traditional	0.405*** (0.109)	-0.190 (0.123)	-0.024 (0.160)	0.101 (0.206)	0.211 (0.229)
Full-time work to partial retirement	-0.326 (0.406)	-1.091** (0.413)	-0.656 (0.470)	-0.497 (0.577)	-0.648 (0.670)
<b>Ethnoracial/nativity group (ref = latine immigrant)</b>					
native-born latine		-0.154 (0.142)	0.062 (0.185)	0.060 (0.227)	0.005 (0.253)
non-latine black		-0.181 (0.115)	0.008 (0.159)	-0.197 (0.199)	-0.423 (0.219)
non-latine white		-0.986*** (0.101)	-0.529*** (0.148)	-0.449* (0.184)	-0.507* (0.201)
<b>Gender (ref = Male)</b>					
Female		-0.255*** (0.055)	-0.355*** (0.073)	-0.253** (0.092)	-0.255* (0.101)
<b>Parent's education (years)</b>					
<b>Childhood traumatic events (ref = None)</b>					
One		-0.077 (0.080)	-0.077 (0.080)	-0.011 (0.100)	0.042 (0.108)
Two		-0.176 (0.157)	-0.176 (0.157)	-0.127 (0.195)	-0.137 (0.216)
Three		0.255 (0.466)	0.255 (0.466)	0.140 (0.596)	0.464 (0.616)
<b>Educational attainment (&lt;12 years)</b>					
12 years		-0.236** (0.092)	-0.236** (0.092)	-0.293* (0.115)	-0.231 (0.127)
>12 years		-0.328** (0.102)	-0.328** (0.102)	-0.250 (0.128)	-0.089 (0.141)
<b>CES-D (0-8)</b>					
<b>Longest job (ref = never worked)</b>					
Prof/managerial		-0.231 (0.213)	-0.231 (0.213)	-0.367 (0.267)	-0.489 (0.286)
Sales/clerical		-0.234 (0.211)	-0.234 (0.211)	-0.351 (0.264)	-0.533 (0.284)
Service		-0.133 (0.213)	-0.133 (0.213)	-0.273 (0.267)	-0.417 (0.288)
Manual		-0.202 (0.211)	-0.202 (0.211)	-0.220 (0.263)	-0.377 (0.283)
<b>Heavy drinker (ref = No)</b>					
<b>Smoker (ref = No)</b>					
In the past		0.120 (0.066)	0.120 (0.066)	0.169* (0.083)	0.118 (0.091)
Current		-0.362** (0.114)	-0.362** (0.114)	-0.167 (0.139)	-0.346* (0.153)
<b>Allostatic load</b>					
<b>Constant</b>		-1.469*** (0.087)	-0.459 (0.267)	-1.032** (0.335)	-1.914*** (0.369)
Observations	8640	8640	6464	5760	5199

Standard errors in parentheses

\*  $p < 0.05$ , \*\*  $p < 0.01$ , \*\*\*  $p < 0.001$ 

All models include outcome-survey-year fixed effects.

Models 4 and 5 consider only cases that had never been diagnosed with Diabetes at age 60-61.

Table B.5: Regression model: IADL

	Model 1	Model 2	Model 3	Model 4	Model 5
<b>IADL</b>					
<b>Retirement pattern (ref = Slightly early)</b>					
Late	-1.196*** (0.098)	-1.164*** (0.099)	-0.748*** (0.125)	-0.637*** (0.142)	-0.613*** (0.153)
Early partial retirement	-1.451*** (0.168)	-1.366*** (0.169)	-0.985*** (0.214)	-0.706*** (0.224)	-0.623*** (0.239)
Mostly out	0.092 (0.108)	-0.053 (0.117)	-0.176 (0.189)	-0.076 (0.216)	-0.003 (0.229)
Part-time work to retirement	-0.949*** (0.172)	-1.090*** (0.176)	-0.926*** (0.235)	-0.812*** (0.265)	-0.875*** (0.289)
Traditional	-0.330* (0.154)	-0.808*** (0.169)	-0.469* (0.235)	-0.225 (0.266)	-0.218 (0.288)
Full-time work to partial retirement	-1.209 (0.730)	-1.705* (0.736)	-2.015 (1.105)	-1.557 (1.105)	-1.071 (1.087)
<b>Ethnoracial/nativity group (ref = latine immigrant)</b>					
native-born latine		-0.497** (0.186)	-0.522 (0.273)	-0.562 (0.311)	-0.636 (0.335)
non-latine black		-0.233 (0.144)	-0.035 (0.222)	-0.118 (0.252)	-0.130 (0.270)
non-latine white		-0.848*** (0.126)	-0.433* (0.208)	-0.432 (0.234)	-0.406 (0.249)
<b>Gender (ref = Male)</b>					
Female		0.125 (0.075)	0.103 (0.115)	0.127 (0.130)	0.145 (0.140)
<b>Parent's education (years)</b>					
<b>Childhood traumatic events (ref = None)</b>					
One			0.310** (0.116)	0.321* (0.129)	0.301* (0.138)
Two			0.479* (0.201)	0.484* (0.210)	0.600** (0.219)
Three			0.960 (0.541)	0.628 (0.629)	0.770 (0.646)
<b>Educational attainment (&lt;12 years)</b>					
12 years			-0.168 (0.130)	-0.016 (0.151)	0.064 (0.160)
>12 years			-0.115 (0.148)	-0.043 (0.171)	-0.075 (0.184)
<b>CES-D (0-8)</b>			0.370*** (0.020)	0.331*** (0.023)	0.335*** (0.024)
<b>Longest job (ref = never worked)</b>					
Prof/managerial			-0.420 (0.274)	-0.300 (0.322)	-0.169 (0.345)
Sales/clerical			-0.460 (0.271)	-0.377 (0.319)	-0.294 (0.341)
Service			-0.395 (0.274)	-0.342 (0.321)	-0.263 (0.344)
Manual			-0.109 (0.267)	0.010 (0.314)	0.119 (0.335)
<b>Heavy drinker (ref = No)</b>			-0.646*** (0.171)	-0.658*** (0.195)	-0.529** (0.205)
<b>Smoker (ref = No)</b>					
In the past			-0.064 (0.103)	0.019 (0.116)	-0.019 (0.124)
Current			0.094 (0.150)	0.078 (0.168)	0.058 (0.180)
<b>IADL at t=1</b>					
<b>Allostatic load</b>					
<b>Constant</b>			-1.739*** (0.106)	-1.896*** (0.164)	-2.314*** (0.412)
Observations	8634	8634	8634	5130	4677

Standard errors in parentheses

\*  $p < 0.05$ , \*\*  $p < 0.01$ , \*\*\*  $p < 0.001$

All models include outcome-survey-year fixed effects.

Table B.6: Regression model: ADL

	Model 1	Model 2	Model 3	Model 4	Model 5
<b>ADL</b>					
<b>Retirement pattern (ref = Slightly early)</b>					
Late	-1.048*** (0.088)	-1.024*** (0.089)	-0.664*** (0.112)	-0.409*** (0.120)	-0.375*** (0.127)
Early partial retirement	-1.344*** (0.150)	-1.257*** (0.151)	-0.909*** (0.188)	-0.714*** (0.195)	-0.634*** (0.205)
Mostly out	0.024 (0.105)	-0.091 (0.113)	-0.188 (0.180)	-0.030 (0.201)	-0.075 (0.216)
Part-time work to retirement	-0.764*** (0.151)	-0.877*** (0.156)	-0.779*** (0.210)	-0.399 (0.223)	-0.395 (0.236)
Traditional	-0.397*** (0.149)	-0.945*** (0.163)	-0.974*** (0.235)	-0.518* (0.254)	-0.481 (0.267)
Full-time work to partial retirement	-0.934 (0.605)	-1.539* (0.613)	-2.330* (1.088)	-1.777 (1.084)	-1.455 (1.072)
<b>Ethnoracial/nativity group (ref = latine immigrant)</b>					
native-born latine		-0.685*** (0.177)	-0.770** (0.252)	-0.775** (0.286)	-0.889** (0.305)
non-latine black		-0.301* (0.134)	-0.168 (0.202)	-0.171 (0.227)	-0.180 (0.238)
non-latine white		-0.996*** (0.117)	-0.767*** (0.189)	-0.597** (0.213)	-0.588** (0.223)
<b>Gender (ref = Male)</b>					
Female		0.016 (0.070)	-0.090 (0.105)	-0.218 (0.114)	-0.230 (0.122)
<b>Parent's education (years)</b>					
<b>Childhood traumatic events (ref = None)</b>					
One			0.226* (0.109)	0.207 (0.117)	0.232 (0.123)
Two			0.094 (0.203)	0.069 (0.212)	0.065 (0.224)
Three			0.724 (0.525)	0.370 (0.561)	0.472 (0.572)
<b>Educational attainment (&lt;12 years)</b>					
12 years			-0.306* (0.122)	-0.128 (0.136)	-0.121 (0.144)
>12 years			-0.160 (0.137)	0.041 (0.151)	0.040 (0.160)
<b>CES-D (0-8)</b>			0.368*** (0.019)	0.323*** (0.021)	0.312*** (0.022)
<b>Longest job (ref = never worked)</b>					
Prof/managerial			-0.517* (0.257)	-0.317 (0.295)	-0.306 (0.315)
Sales/clerical			-0.528* (0.254)	-0.223 (0.292)	-0.197 (0.312)
Service			-0.580* (0.258)	-0.366 (0.295)	-0.354 (0.316)
Manual			-0.415 (0.252)	-0.183 (0.289)	-0.187 (0.308)
<b>Heavy drinker (ref = No)</b>			-0.444** (0.143)	-0.421** (0.158)	-0.335* (0.166)
<b>Smoker (ref = No)</b>					
In the past			0.332*** (0.097)	0.348*** (0.105)	0.329** (0.111)
Current			0.459*** (0.139)	0.399** (0.152)	0.316 (0.163)
<b>ADL at t=1</b>				1.759*** (0.115)	1.702*** (0.122)
<b>Allostatic load</b>					0.269*** (0.048)
<b>Constant</b>	-1.594*** (0.100)	-0.758*** (0.153)	-1.318*** (0.329)	-2.052*** (0.366)	-2.464*** (0.395)
Observations	8634	8634	6462	5783	5248

Standard errors in parentheses

\*  $p < 0.05$ , \*\*  $p < 0.01$ , \*\*\*  $p < 0.001$

All models include outcome-survey-year fixed effects.

Table B.7: Regression model: Pain

	Model 1	Model 2	Model 3	Model 4	Model 5
<b>Pain</b>					
<b>Retirement pattern (ref = Slightly early)</b>					
Late	-0.538*** (0.056)	-0.539*** (0.056)	-0.351*** (0.068)	-0.194** (0.073)	-0.156* (0.076)
Early partial retirement	-0.643*** (0.083)	-0.639*** (0.083)	-0.414*** (0.097)	-0.329** (0.104)	-0.320** (0.108)
Mostly out	0.013 (0.085)	-0.095 (0.089)	-0.094 (0.127)	-0.019 (0.136)	0.031 (0.144)
Part-time work to retirement	-0.413*** (0.099)	-0.483*** (0.102)	-0.304* (0.120)	-0.124 (0.128)	-0.102 (0.134)
Traditional	-0.684*** (0.115)	-0.542*** (0.130)	-0.539** (0.174)	-0.329 (0.186)	-0.181 (0.198)
Full-time work to partial retirement	-0.417 (0.358)	-0.480 (0.365)	0.002 (0.450)	0.375 (0.468)	0.452 (0.487)
<b>Ethnoracial/nativity group (ref = latine immigrant)</b>					
native-born latine		-0.057 (0.143)	0.038 (0.193)	0.008 (0.206)	0.159 (0.217)
non-latine black		-0.296* (0.117)	-0.045 (0.167)	-0.059 (0.179)	0.024 (0.191)
non-latine white		-0.100 (0.101)	0.199 (0.153)	0.180 (0.164)	0.320 (0.174)
<b>Gender (ref = Male)</b>					
Female		0.176*** (0.050)	0.138* (0.068)	0.078 (0.072)	0.016 (0.076)
<b>Parent's education (years)</b>					
<b>Childhood traumatic events (ref = None)</b>					
One			-0.006 (0.009)	0.000 (0.010)	-0.005 (0.011)
Two			0.240*** (0.072)	0.147 (0.077)	0.165* (0.081)
Three			0.148 (0.142)	0.021 (0.152)	0.074 (0.158)
<b>Educational attainment (&lt;12 years)</b>			1.177* (0.512)	1.307* (0.550)	1.180* (0.565)
12 years			0.027 (0.088)	0.125 (0.095)	0.129 (0.100)
>12 years			0.085 (0.097)	0.213* (0.104)	0.226* (0.110)
<b>CES-D (0-8)</b>			0.330*** (0.017)	0.278*** (0.018)	0.267*** (0.019)
<b>Longest job (ref = never worked)</b>					
Prof/managerial		-0.350 (0.205)	-0.239 (0.205)	-0.239 (0.218)	-0.136 (0.234)
Sales/clerical		-0.435* (0.203)	-0.203 (0.203)	-0.338 (0.216)	-0.258 (0.233)
Service		-0.187 (0.207)	-0.125 (0.207)	-0.125 (0.220)	0.004 (0.237)
Manual		-0.187 (0.204)	-0.137 (0.204)	-0.137 (0.217)	-0.111 (0.233)
<b>Heavy drinker (ref = No)</b>		-0.371*** (0.084)	-0.257** (0.084)	-0.257** (0.089)	-0.250** (0.093)
<b>Smoker (ref = No)</b>					
In the past		0.118 (0.061)	0.118 (0.061)	0.110 (0.065)	0.122 (0.068)
Current		0.062 (0.098)	0.062 (0.098)	0.036 (0.105)	0.030 (0.112)
<b>Pain at t=1</b>					
<b>Allostatic load</b>			1.671*** (0.064)		1.665*** (0.067)
<b>Constant</b>	-0.729*** (0.074)	-0.698*** (0.124)	-1.408*** (0.261)	-2.002*** (0.278)	-2.302*** (0.304)
Observations	8589	8589	6437	6435	5812

Standard errors in parentheses

\*  $p < 0.05$ , \*\*  $p < 0.01$ , \*\*\*  $p < 0.001$

All models include outcome-survey-year fixed effects.



Table B.8: Average Marginal Effects of Retirement patterns, from Model 2

	SRH	CVD	HBP	DBT	IADL	ADL	PAIN
<b>Retirement pattern (ref = Slightly early)</b>							
Late	-0.158*** (0.011)	-0.098*** (0.012)	-0.034** (0.012)	-0.047*** (0.011)	-0.110*** (0.008)	-0.113*** (0.009)	-0.122*** (0.012)
Early partial retirement	-0.170*** (0.015)	-0.069*** (0.017)	-0.072*** (0.018)	-0.049** (0.016)	-0.121*** (0.010)	-0.129*** (0.011)	-0.142*** (0.017)
Mostly out	0.014 (0.020)	-0.041* (0.021)	-0.022 (0.020)	0.038 (0.020)	-0.007 (0.016)	-0.014 (0.017)	-0.023 (0.021)
Part-time work to retirement	-0.117*** (0.020)	-0.099*** (0.022)	-0.077*** (0.023)	-0.080*** (0.019)	-0.106*** (0.012)	-0.102*** (0.014)	-0.110*** (0.022)
Traditional	-0.130*** (0.021)	-0.116*** (0.025)	-0.012 (0.032)	-0.035 (0.022)	-0.087*** (0.014)	-0.107*** (0.014)	-0.123*** (0.027)
Full-time work to partial retirement	-0.216*** (0.041)	-0.255*** (0.054)	-0.176* (0.083)	-0.159*** (0.042)	-0.135*** (0.027)	-0.144*** (0.030)	-0.110 (0.078)
Observations	8630	8640	8640	8640	8634	8634	8589

Standard errors in parentheses

\*  $p < 0.05$ , \*\*  $p < 0.01$ , \*\*\*  $p < 0.001$

Average marginal effects are estimated from model 2 in tables B.1 through B.7

Dependent variables are listed on the top. Abbreviated variables – SRH = 'Self-rated health; HBP = 'High blood pressure'; DBT = 'Diabetes'

Table B.9: Average Marginal Effects of Retirement patterns, from Model 3

	SRH	CVD	HBP	DBT	IADL	ADL	PAIN
<b>Retirement pattern (ref = Slightly early)</b>							
Late	-0.083*** (0.011)	-0.081*** (0.013)	-0.022 (0.014)	-0.034** (0.013)	-0.054*** (0.008)	-0.058*** (0.009)	-0.072*** (0.014)
Early partial retirement	-0.085*** (0.016)	-0.037 (0.019)	-0.058** (0.020)	-0.021 (0.018)	-0.067*** (0.011)	-0.074*** (0.012)	-0.084*** (0.019)
Mostly out	0.007 (0.023)	-0.031 (0.027)	-0.037 (0.028)	0.001 (0.025)	-0.015 (0.016)	-0.019 (0.017)	-0.020 (0.027)
Part-time work to retirement	-0.063** (0.020)	-0.079** (0.024)	-0.071** (0.026)	-0.056** (0.021)	-0.064*** (0.012)	-0.066*** (0.014)	-0.063** (0.024)
Traditional	-0.079*** (0.022)	-0.090** (0.031)	-0.010 (0.041)	-0.004 (0.028)	-0.037* (0.016)	-0.078*** (0.014)	-0.107*** (0.032)
Full-time work to partial retirement	-0.163*** (0.042)	-0.234*** (0.062)	-0.124 (0.100)	-0.099 (0.059)	-0.099*** (0.023)	-0.124*** (0.021)	0.001 (0.096)
Observations	6459	6464	6464	6464	6462	6462	6437

Standard errors in parentheses

\*  $p < 0.05$ , \*\*  $p < 0.01$ , \*\*\*  $p < 0.001$

Average marginal effects are estimated from model 3 in tables B.1 through B.7

Dependent variables are listed on the top. Abbreviated variables – SRH = 'Self-rated health'; HBP = 'High blood pressure'; DBT = 'Diabetes'

Table B.10: Average Marginal Effects of Retirement patterns, from Model 4

	SRH	CVD	HBP	DBT	IADL	ADL	PAIN
<b>Retirement pattern (ref = Slightly early)</b>							
Late	-0.046*** (0.011)	-0.038** (0.012)	-0.009 (0.019)	-0.016 (0.011)	-0.046*** (0.010)	-0.034*** (0.010)	-0.035** (0.013)
Early partial retirement	-0.053*** (0.015)	-0.015 (0.018)	-0.066** (0.025)	0.003 (0.016)	-0.050*** (0.013)	-0.054*** (0.013)	-0.058** (0.018)
Mostly out	0.023 (0.021)	-0.033 (0.024)	-0.016 (0.035)	-0.007 (0.021)	-0.006 (0.018)	-0.003 (0.018)	-0.004 (0.025)
Part-time work to retirement	-0.025 (0.019)	-0.035 (0.022)	-0.030 (0.031)	-0.019 (0.019)	-0.055*** (0.014)	-0.033* (0.017)	-0.022 (0.023)
Traditional	-0.035 (0.023)	-0.042 (0.029)	-0.002 (0.052)	0.013 (0.027)	-0.018 (0.020)	-0.041* (0.018)	-0.058 (0.032)
Full-time work to partial retirement	-0.125** (0.045)	-0.147** (0.052)	-0.089 (0.106)	-0.052 (0.051)	-0.084** (0.033)	-0.099** (0.031)	0.071 (0.092)
Observations	6457	5621	3846	5760	5130	5783	6435

Standard errors in parentheses

\*  $p < 0.05$ , \*\*  $p < 0.01$ , \*\*\*  $p < 0.001$

Average marginal effects are estimated from model 4 in tables B.1 through B.7

Dependent variables are listed on the top. Abbreviated variables – SRH = 'Self-rated health; HBP = 'High blood pressure; DBT = 'Diabetes'