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Dedication

En primer lugar, quiero agradecer a mis directoras Lucia y Gianna por su acompañamiento constante, su apoyo y por toda la paciencia. Luego, a las autoridades y a todos aquellos que hacen posible este programa, por su labor cotidiana, que sostiene las condiciones para que todo esto exista y se lleve adelante. También a los amigos que conocí en la 115 y a la resistencia en Firenze, por compartir el camino, haciéndolo más ameno y más colectivo, entre alegrías, preguntas, certezas, entusiasmos, angustias y cansancios.

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«Que el sol los ilumine y crezcan en paz,
ellos son las semillas para este bosque de humanos.
Estoy viendo el futuro y lo veo en la plaza jugar.»
Pity Álvarez, *Niños* (1996)

Introduction

Families are the primary environment through which human capital, aspirations, and socio-emotional resilience are formed and transmitted across generations. Structural forces, such as inequality, institutional quality, labor market conditions, and public policy, do not act on children directly. Instead, they are filtered through families, shaping how time is allocated, how expectations are formed, and how relationships evolve within the household. As a result, the same macro-level shock or institutional change can generate very different outcomes depending on how families interpret and respond to it. Understanding development therefore requires understanding the family as a central site of adaptation.

This dissertation studies these processes in Latin America, a region characterized by persistently high levels of inequality, segmented labor markets, and uneven institutional capacity. Despite a period of declining inequality in the 2000s, recent evidence points to a slowdown and even stagnation in the reduction of disparities, leaving inequality as a defining and enduring feature of the region (Gasparini and Cruces, 2021; Lustig et al., 2013b; Gasparini et al., 2011). In such contexts, households are not passive recipients of external conditions but active agents that reorganize behavior, expectations, and interactions in response to constraints and uncertainty. Across three empirical studies, this dissertation examines how structural and institutional environments shape parenting behavior, expectations, and adolescents' socio-emotional development, with particular attention to Peru.

A unifying perspective across the chapters is that family behavior is adaptive. Parenting is not only an expression of preferences or cultural norms, but a strategic response to the environment in which households operate. In the framework of Doepke and Zilibotti (2017), parents are altruistic in caring about their children's welfare but also paternalistic in shaping their preferences and behaviors in ways that they perceive as conducive to success. The balance between these motives depends on the external environment: in settings with stable institutions and predictable returns to effort, parents can emphasize autonomy and self-expression, whereas in contexts characterized by uncertainty and limited protection, they tend to favor discipline, control, and conformity as adaptive traits. Evidence from developmental psychology and empirical studies on parental investments reinforces this view, highlighting that parenting practices, time allocations, and disciplinary strategies respond jointly to preferences, cultural norms, and structural constraints, and play a central role in shaping children's cognitive and socio-emotional development (Bornstein, 2013; Brilli and Moriconi, 2024; Egyir et al., 2026).

These dynamics are particularly salient in Peru, where broader patterns of inequality and institutional constraints are reflected in the education system. Improvements in access to schooling have coexisted with persistent inequalities in quality and outcomes. While participation in schooling is now close to universal at basic levels, access to high-quality education remains strongly shaped by socioeconomic and geographic factors, and disparities in learning and progression persist across regions and population groups (OECD, 2026). Administrative and survey evidence further reveals substantial heterogeneity in educational

trajectories by income, location, and language, pointing to enduring gaps in opportunities and outcomes (INEI, 2024).

Micro-level evidence reinforces this picture: socioeconomic disparities in cognitive skills emerge early in childhood and persist throughout the schooling cycle, with family socioeconomic status accounting for a substantial share of variation in language achievement (Ngoy et al., 2024). This suggests that differences in home environments and parental resources play a central role in shaping children's development, reinforcing the importance of family-mediated channels in the transmission of structural inequality. At the same time, the labor market is characterized by high levels of informality, affecting a large share of workers and limiting access to stable income and social protection (Pinto et al., 2026). In such a context, families play a central role in buffering risk, shaping expectations, and organizing investments in children.

These patterns are consistent with a broader framework in which structural conditions affect child development primarily through their impact on family behavior. A large body of economic research shows that the skills shaping life outcomes are multidimensional, and that socio-emotional skills play a central role alongside cognitive abilities in determining education, labor market success, and well-being (Heckman and Rubinstein, 2001; Chiteji, 2010; Almlund et al., 2011; Heckman and Kautz, 2012). The process through which these skills are formed is inherently dynamic, with early investments influencing later outcomes and generating complementarities across skill domains (Heckman, 2006; Heckman, 2007; Cunha and Heckman, 2007). In this framework, parental inputs, through time, interactions, and expectations, are key determinants of both cognitive and socio-emotional development. Socio-emotional skills are therefore likely to be especially sensitive to family-mediated channels. Unlike cognitive outcomes, they are deeply embedded in interpersonal interactions, expectations, and daily routines, making them particularly responsive to changes in the household environment.

To examine these mechanisms empirically, the dissertation considers three complementary contexts in which structural conditions shape family behavior and, through it, adolescents' socio-emotional development: parenting practices, expectations, and adolescents' daily routines and constraints. The first study examines how macro-level structural conditions relate to parenting practices across Latin America. Using data from the World Values Survey (WVS) and the Multiple Indicator Cluster Surveys (MICS), it constructs measures of parenting values and disciplinary practices and relates them to country-level indicators of inequality and institutional quality (Kaufmann et al., 2000; CEDLAS, 2024; Neidhöfer et al., 2018). The analysis shows that stronger institutions and lower inequality are associated with more autonomy-oriented and less coercive parenting, while weaker governance and persistent inequality correlate with stricter and more authoritarian styles. These patterns suggest that parenting reflects structural necessity: where public institutions provide limited security or social protection, families substitute through greater control and monitoring.

The second study examines how maternal expectations regarding future support from children shape adolescents' socio-emotional development. In contexts characterized by limited formal insurance and persistent labor market constraints, expectations of intergenerational support play a central role in family organization. Using longitudinal data from Young Lives Peru, the analysis shows that higher maternal expectations of future support have a negative causal effect on adolescents' socio-emotional outcomes, including self-esteem, self-efficacy, and peer relations. To address endogeneity concerns and isolate exogenous variation in expectations, the study exploits local female labor market instability as an instrumental variable. Variation in labor market conditions affects mothers' perceived economic security and reliance on intergenerational

support, providing a source of exogenous variation in expectations. The results indicate that improved labor market conditions reduce maternal expectations, thereby mitigating the psychological burden associated with anticipated future obligations. These findings highlight expectations as a key channel through which economic conditions shape child development within the household.

The third study examines the distributional effects of Peru's *Jornada Escolar Completa* (JEC), a 2015 reform that extended the public secondary school day and reorganized the provision of schooling through longer instructional time and complementary school inputs. Using Young Lives Peru panel data and a continuous measure of departmental exposure based on the share of public secondary schools adopting the reform, the analysis implements a Difference-in-Differences design with individual fixed effects and allows treatment effects to vary across the baseline distribution of skills. The results reveal substantial heterogeneity in socio-emotional outcomes: adolescents in the lowest quartile of the baseline distribution experience positive effects on self-efficacy, self-esteem, peer relations, and pride, while effects attenuate across the distribution and become negative at the top, implying a compression of socio-emotional skills. In contrast, cognitive effects are smaller and largely concentrated among initially low-performing students. Additional heterogeneity by demographic and contextual characteristics is limited, suggesting that baseline skill position is the primary dimension along which responses differ. Evidence on time use indicates that the reform increased time spent at school and studying, consistent with the interpretation that changes in daily routines are one channel through which the reform operated.

The three studies provide a coherent account of how structural conditions shape child development through family behavior. Across contexts, a consistent pattern emerges: inequality and institutional quality influence parenting practices; labor market conditions shape expectations and intergenerational arrangements; and education reforms alter adolescents' daily routines and constraints, generating heterogeneous socio-emotional responses depending on individuals' initial endowments.

Empirically, the dissertation combines complementary identification strategies to link macro-level variation with micro-level outcomes. The first chapter documents cross-country relationships between institutions, inequality, and parenting. The second provides causal evidence using individual fixed effects and a shift–share instrumental variable to isolate exogenous variation in expectations. The third implements a Difference-in-Differences design with continuous treatment intensity to study how a common institutional shock translates into heterogeneous individual responses. These approaches span a continuum from broad structural correlations to within-individual responses to institutional change, allowing for a more complete characterization of the mechanisms linking macro conditions to child development.

The findings contribute to several strands of the literature. First, they advance research on parenting by showing that structural conditions relate not only observed practices, but also expectations and relational dynamics within the household. By combining cross-country evidence with causal identification, the dissertation shows that parenting behavior and intergenerational arrangements adjust systematically to institutional quality, economic constraints, and labor market conditions, rather than reflecting fixed cultural norms alone. Second, the dissertation contributes to the literature on human capital formation by emphasizing socio-emotional skills as central and responsive outcomes. Consistent with the dynamic skill formation framework, the results show that these skills are shaped by family environments and expectations, and respond to both economic conditions and institutional interventions. Third, the dissertation contributes to the evaluation of education policies by documenting how institutional reforms can reshape the distribution of outcomes. In the context of extended school-day policies, the findings show that average effects mask

substantial heterogeneity, with common changes in constraints generating gains for some individuals and losses for others, thereby altering the distribution of socio-emotional skills.

More broadly, the dissertation argues that development operates through family-mediated channels. Structural changes are not transmitted directly to children, but are interpreted and transformed within households through adjustments in parenting, expectations, and responses to changing constraints. By examining how families respond to inequality, labor market conditions, and policy reforms, this work provides a unified account of how external environments shape socio-emotional development and the formation of human capital. This perspective underscores that understanding development requires not only identifying the effects of policies and shocks, but also the mechanisms through which families adapt to them.

Chapter 1

Institutions, Development, and Parenting in Latin America [1]

Abstract

This study examines how institutional quality and economic inequality are associated with parenting decisions across Latin America. Parenting is conceptualized as a strategic response to broader contextual conditions, through which families adapt both long-term orientations and short-term disciplinary practices to local environments. Unlike much of the existing literature, which focuses on high-income countries, this analysis jointly considers parenting styles and disciplinary practices, emphasizing the role of behavioral control in low- and middle-income contexts. Using cross-country data from the World Values Survey (WVS) and the Multiple Indicator Cluster Surveys (MICS), the study documents stylized facts and examines descriptive associations between governance, inequality, and parenting behaviors. The results show that these associations are heterogeneous and depend on how these conditions are measured. Parenting styles are more strongly associated with indicators capturing longer-run constraints, particularly intergenerational persistence, whereas disciplinary practices appear more sensitive to contemporaneous conditions and vary across dimensions of institutional quality. These findings highlight the importance of considering both inequality and governance, and their multidimensional character, when analyzing parenting behavior in developing regions.

1.1 Introduction

Parenting constitutes a central mechanism through which human capital, values, and aspirations are transmitted across generations. Within the development economics literature, parental behavior is often analyzed in terms of time and resource allocation (Campaña et al., 2017), yet less attention is paid to parenting as a broader strategy for shaping children's preferences and behaviors in response to broader economic and institutional conditions. This chapter adopts that broader perspective by examining how inequality and institutional quality are associated with parenting styles and disciplinary practices across Latin America, a region marked by persistent income disparities, institutional fragility, and strong familial networks.

[1] The author thanks the participants of the 4th edition of DevEconMeet and the participants of the 1st edition of the Alumni Workshop – National University of La Plata for their valuable contributions and comments.

A growing literature highlights that parental investment decisions are responsive to both children's evolving abilities and their surrounding environment. Parents adjust their involvement in learning, social interaction, and media use depending on the child's developmental stage (Nicoletti and Tonei, 2020). Contextual elements, including household routines and the division of domestic labor, also shape the structure and intensity of these investments (Price et al., 2021; Giménez-Nadal et al., 2019; Kassouf et al., 2020; Borga, 2019). These findings reinforce the view that parenting is not static but adaptive, responding to both micro-level household dynamics and broader contextual conditions. Importantly, parenting practices play a critical role in shaping children's emotional development and motivation, which are key predictors of long-term social and economic success (Cunha et al., 2006; Heckman et al., 2006; Contreras and Puentes, 2017).

One influential framework for understanding parental strategies is the classification of parenting styles, first introduced by Baumrind (1967). These styles, authoritarian, authoritative, permissive, and neglectful, differ based on parental responsiveness and control. Authoritative parenting, combining warmth and structure, is generally associated with favorable outcomes in children's academic, emotional, and social development, whereas authoritarian parenting, characterized by high control and low responsiveness, is often linked to less favorable outcomes. While this typology has been extensively studied in high-income settings, its determinants and variation across institutional environments remain less well understood in developing regions. Building on this typology, Doepke and Zilibotti (2017) introduce a theoretical model that treats parenting as a utility-maximizing decision shaped by economic and institutional conditions. In their framework, inequality, the returns to education, and institutional quality influence parents' strategic choices by altering the expected returns to effort and value transmission. In more unequal or uncertain environments, parents may place greater emphasis on discipline and conformity, while in more secure settings they may prioritize autonomy. Their empirical evidence, based on OECD countries, documents systematic associations between macroeconomic conditions and parenting styles.

Recent contributions extend this perspective by emphasizing that parenting responds not only to economic incentives but also to cultural transmission and institutional environments. For example, Brilli and Moriconi (2024) highlight how parenting norms and practices are jointly shaped by economic conditions and cultural persistence, while Egyir et al. (2026) provide cross-country evidence that parenting behaviors vary systematically with macro-level constraints and social environments. These contributions reinforce the view that parenting strategies are context-dependent and may differ substantially across institutional settings.

This chapter builds on this framework by focusing on Latin America, where institutional provision is less universal and extended family networks play a central role in daily life. In this setting, the family acts as a key provider of socialization, emotional support, and caregiving (Ayón et al., 2015; Domènech Rodriguez et al., 2009; Hamel et al., 2023). These features imply that parenting decisions are made under tighter constraints and may respond more strongly to economic and institutional conditions than in high-income contexts.

In addition to parenting styles, disciplinary practices represent a distinct but related dimension of parenting. These practices, ranging from reasoning to physical punishment, are often more immediate responses to constraints and shocks. Recent evidence shows that adverse economic conditions can increase the prevalence of harsh or coercive discipline through both resource constraints and parental stress (Brown and De Cao, 2024). At the same time, cross-country evidence indicates that disciplinary practices vary

widely across institutional and cultural contexts, reflecting both constraints and social norms (Pesando et al., 2024). These findings suggest that parenting styles and disciplinary practices may respond differently to contextual conditions, an issue that remains largely unexplored in the literature.

Latin America provides a particularly relevant context for examining these relationships. The region has experienced substantial changes in inequality over the past decades, with a sharp increase in the 1980s and 1990s followed by a decline beginning in the late 1990s (Gasparini et al., 2011; Lustig et al., 2013a). Despite these improvements, inequality remains high and intergenerational mobility limited, although educational mobility has increased among younger cohorts (Neidhöfer et al., 2018; Neidhöfer, 2019). These patterns coexist with substantial variation in institutional quality, captured by differences in governance, state capacity, and the provision of public goods (Kaufmann et al., 2000; Rodrik et al., 2004). Together, these features generate heterogeneous environments in which families make parenting decisions.

This chapter investigates how parenting styles and disciplinary practices vary across these environments. It combines data from the World Values Survey (WVS), used to construct parenting style categories, and the Multiple Indicator Cluster Surveys (MICS), which provide information on child discipline. These individual-level data are matched with country-level measures of inequality and governance to explore associations between country-level inequality, institutional conditions and parenting behavior. The empirical analysis proceeds in two steps. First, descriptive patterns document cross-country and over-time variation in parenting styles and disciplinary practices. Second, multinomial regression models with individual controls and country and wave fixed effects are used to examine within-country associations between macro-level conditions and parenting outcomes. This distinction is important, as cross-country correlations and within-country estimates capture different sources of variation and may lead to different interpretations.

The results indicate that the relationship between these conditions and parenting behavior is heterogeneous and depends on how these conditions are measured. Parenting styles are more strongly associated with indicators capturing longer-run constraints, such as intergenerational persistence, while their relationship with contemporaneous income inequality is weaker once country-level factors are accounted for. In contrast, disciplinary practices appear more sensitive to contemporaneous conditions and display different patterns across inequality measures. Governance indicators also exhibit heterogeneous associations across dimensions, suggesting that institutional quality affects parenting through multiple channels rather than a single mechanism.

These findings contribute to the literature in three ways. First, they extend the empirical analysis of parenting strategies to Latin America, a context where economic constraints and institutional variation are particularly salient. Second, they jointly examine parenting styles and disciplinary practices, highlighting that these dimensions respond differently to broader contextual conditions. Third, they show that the relationship between macro-level factors and parenting behavior depends critically on the distinction between long-run and short-run constraints, as well as on the level of aggregation at which these relationships are analyzed.

The remainder of the chapter is organized as follows. Section 1.2 presents the theoretical foundation. Section 1.3 reviews institutional legacies and inequality in Latin America. Section 1.4 details the data and creation of variables. Section 1.5 documents stylized facts on parenting values and disciplinary practices. Section 1.6 reports the empirical analysis. Section 1.7 concludes with a discussion of implications for development and future research.

1.2 Theoretical Framework: Parenting as a Strategic Response

This section develops the theoretical foundation based on the model introduced by Doepke and Zilibotti (2017), which conceptualizes parenting as a strategic response to broader conditions. In their framework, parents are altruistic and forward-looking, and they choose among authoritarian, authoritative, and permissive parenting styles depending on the expected returns to shaping children's preferences. The extent of parental control is modeled as an optimal response to three key environmental variables: income inequality, intergenerational mobility, and institutional quality. In highly unequal and uncertain environments, the incentives to exert control over children's behaviors and preferences increase. Conversely, in more secure and equal settings, parents are more likely to promote autonomy and self-expression.

Doepke and Zilibotti's model rests on two central mechanisms: parents care about their children's well-being (altruism), but they also seek to shape their children's values to align with their own goals and beliefs (paternalism). The choice of parenting style is driven by perceived economic returns to value transmission. In contexts where adopting parents' preferences or strategies is more advantageous for children, parents opt for more controlling styles.

The model implies that parenting styles will differ systematically across countries depending on economic and contextual characteristics. Low inequality, high social mobility, and robust institutional environments are associated with permissive styles. High inequality, low mobility, and weak institutions favor authoritarian and authoritative styles, depending on whether parents use control harshly or strategically.

This research accepts and implements the Doepke–Zilibotti framework to the Latin American context, where high inequality, moderate to weak state capacity, and strong familial networks are pervasive, shape both parental investments and children's time use. In the region, more educated parents devote systematically more educational childcare time (Campaña et al., 2017), inequality of opportunity in foundational skills emerges early (Contreras and Puentes, 2017), and children's own reallocation of time toward chores or work reduces cognitive and non-cognitive skill accumulation (Borga, 2019; Kassouf et al., 2020). These features imply that the same strategic logic proposed by Doepke and Zilibotti operates under tighter constraints, potentially shifting parenting toward greater control and more instrumental discipline when institutional support is limited. This is, in institutional contexts marked by voids and high household stress, coercive discipline may arise not as a parental preference but as a constrained coping strategy.

To guide the empirical exploration, this study discusses three interrelated pathways through which economic and institutional conditions could, on average, shape parenting behavior in Latin America. These pathways draw on the theoretical foundations of the Doepke–Zilibotti model and are adapted to reflect the socio-economic realities and institutional gaps of the region.

First, these conditions influence parental preferences and beliefs. Parents' expectations and goals for their children are typically shaped by their trust in institutions, perceptions of community safety, and beliefs about intergenerational reciprocity. In Latin America, where public trust in formal institutions is often limited and family bonds are culturally emphasized, parents may, on average, place greater importance on obedience, perseverance, or emotional closeness than on independence and self-expression. These beliefs are not only culturally embedded but also forward-looking adaptations to perceived environmental risks and opportunities.

Second, parenting decisions are shaped by constraints and resource limitations. Even when parents value autonomy-promoting strategies, the feasibility of implementing these approaches may be curtailed by limited access to early childhood education, income support, or quality healthcare. In such settings,

high-control or coercive parenting may emerge as an adaptive strategy to manage stress and maintain order, particularly in lower-income households. On average, the scarcity of institutional support increases the likelihood that parenting strategies will be driven by necessity rather than intention.

Third, the intersection of inequality and gender norms produces a pronounced gendered burden in caregiving. In Latin America, caregiving and disciplining responsibilities fall disproportionately on women, especially in low-income households. These gendered dynamics are shaped by both disadvantages and societal expectations. Time scarcity, limited economic autonomy, and the unequal distribution of domestic labor can lead mothers to rely more frequently on instrumental or reactive forms of discipline. On average, maternal stress and limited autonomy constrain the expression of ideal parenting strategies, particularly among disadvantaged women. These three dimensions highlight how parenting in Latin America is not simply a matter of cultural tradition but a strategic response to overlapping conditions.

This theoretical framing informs the design of the empirical analysis, which uses values reported in the World Values Survey (WVS) and discipline practices in the Multiple Indicator Cluster Surveys (MICS) to explore how parenting strategies co-vary with inequality and state capacity.

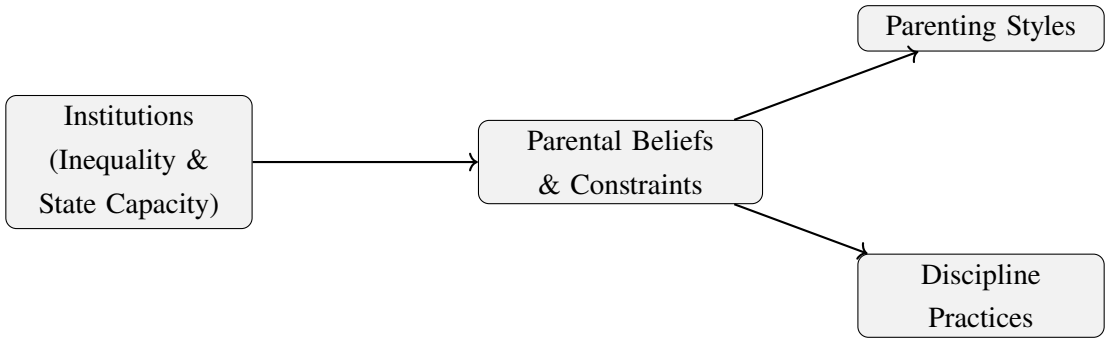


Figure 1.1: Implementation of the conceptual model: economic and institutional conditions, parental beliefs, and parenting strategies

Figure 1.1 presents the implementation logic used in this chapter. It illustrates how institutional features such as inequality and state capacity influences parents' beliefs and constraints, which in turn influence the choice of parenting style and discipline method. These decisions, while not modeled directly here, are ultimately expected to influence children's socio-emotional outcomes and the intergenerational transmission of norms.

1.3 Institutional Legacies and Inequality in Latin America

Latin America exhibits enduring inequalities and uneven state capacity, which have shaped the environments in which families raise their children. The region's institutional landscape has been influenced by historical legacies of colonial extraction, state-building processes that often prioritized elite interests, and more recent periods of economic liberalization, particularly in the 1980s and 1990s, that were not always accompanied by expanded welfare provision. These long-standing dynamics have contributed to persistent differences in access to essential services such as education, healthcare, and social protection. However, the institutional trajectory of the region is not one of linear deterioration. In contrast to earlier decades, the early 2000s marked a shift toward greater social investment, including the expansion of conditional cash transfer (CCT) programs, which contributed to a reduction in inequality in many countries and signaled the

emergence of a more redistributive state in parts of the region.

The quality of governance plays a key role in shaping Latin America's institutional environments. Kaufmann et al. (2000) classify governance indicators into three broad domains: how governments are selected and held accountable; the quality of policy formulation and implementation; and the degree of respect for institutions governing economic and social interaction. They argue that governance quality varies systematically across countries and is deeply rooted in political and historical processes, particularly in formerly colonized regions.

In this regard, Acemoglu et al. (2001) propose that different colonial strategies led to the establishment of distinct institutional regimes. In regions where European settler mortality was high, colonial powers developed extractive institutions with few protections for property or political rights. These institutions persisted after independence, limiting long-term development. In contrast, regions with lower settler mortality were more likely to receive inclusive institutions aimed at safeguarding rights and enabling economic growth. Acemoglu et al. (2002) extend this argument by showing that regions that were more developed before colonization ended up poorer in the long run due to the imposition of extractive institutions in economically valuable areas. These findings suggest that Latin America's institutional weaknesses have deep historical roots that continue to shape patterns of inequality and development.

The consequences of these institutional trajectories extend to the ways in which states exercise authority and distribute resources. O'Donnell (1994) argues that Latin American democracies often exhibit "delegative" tendencies, where elected leaders enjoy broad authority without robust checks and balances, undermining institutional consolidation and reinforcing elite dominance. These dynamics contribute to uneven governance outcomes and perpetuate inequality, especially in settings where the rule of law is weak or selectively applied.

These broader legacies are reflected in present-day institutional fragmentation. Institutional arrangements marked by ethnic, racial, and geographic segmentation continue to leave a visible imprint on contemporary patterns of inequality. In many areas, the uneven enforcement of laws, the prevalence of informality, and limited trust in public institutions shape how families engage with the state. As documented by Perry et al. (2007), informality in Latin America arises not only from regulatory burdens but also from exclusion from public goods and services. Saavedra and Tommasi (2007) emphasize that informality stems from the state's failure to ensure universal provision of public goods and legal protections. This undermines the social contract, fosters segmented citizenship, and weakens citizens' willingness to comply with the state's authority.

These institutional shortcomings not only affect access to services but also influence how families perceive risk and plan for the future. In environments marked by uncertainty and weak state guarantees, households may adopt precautionary behaviors, emphasizing security, conformity, and interdependence within the family unit. Such strategies can shape parenting goals and practices, reinforcing norms that prioritize discipline, obedience, and close familial bonds over individual autonomy.

Culture also plays a crucial role in shaping parenting practices. From an economics perspective, as discussed in Doepke and Zilibotti (2019), parenting strategies respond to institutional and economic incentives. Differences in institutional and policy design are often considered key drivers of development disparities across countries, as they determine the frameworks within which norms and behaviors evolve (Rodrik et al., 2004; Acemoglu and Robinson, 2013). From a psychology perspective, **bornstein2013** emphasizes that culture influences when and how children are cared for, the degree of autonomy they are

allowed, the emphasis placed on nurturance versus discipline, and the specific values that are prioritized.

Agostinelli et al. (2025) develop a model to study the bidirectional interaction between culture and parenting, showing that this relationship operates as a self-reinforcing feedback loop. Cultural norms and social environments guide parenting choices, while parenting practices transmit and adapt these values to the next generation. Parents' decisions regarding discipline, autonomy, social exposure, and neighborhood selection both reflect and reshape local culture, which in turn influences future parenting strategies. Through this mechanism, parenting not only responds to cultural and institutional conditions but also contributes to the persistence of social stratification and long-run inequality.

These institutional factors also help explain Latin America's distinctive trajectory of inequality. On average, the region remains one of the most unequal in the world, exhibiting higher income inequality than would be expected given its level of development (Gasparini and Cruces, 2021). Over the past thirty years, inequality trends have followed two distinct phases. During the 1980s and 1990s, inequality generally increased, particularly in countries facing macroeconomic crises and limited institutional protection through labor and social policy (Gasparini et al., 2011; Gasparini and Lustig, 2011; Alvaredo and Gasparini, 2015; Levy and Schady, 2013).

In contrast, since the early 2000s, many countries in the region have experienced a decline in inequality. This trend, particularly evident between 2002 and 2017, has been attributed to both market and non-market factors. On the market side, a narrowing wage gap between skilled and unskilled workers, due in part to the expansion of basic education and a shift in the relative supply of skilled labor—played a key role. On the policy side, the rise of targeted income transfer programs, particularly conditional cash transfers (CCTs), contributed significantly to redistribution. Preferences for redistribution themselves can shift with migration exposure in the region (Martínez-Correa et al., 2022). According to Gasparini and Cruces (2021), these redistributive policies became possible through increased fiscal space, political will, and a renewed emphasis on social policy. The overall decline in the skill premium also reflected favorable external conditions and stronger macroeconomic fundamentals, such as low inflation and stable growth, which supported labor demand and formalization.

These broader regional trends are reflected in national-level analyses. Lustig et al. (2013a) examine inequality trajectories in Argentina, Brazil, and Mexico, highlighting how changes in the relative supply and demand for skilled labor help explain the observed reductions. In Argentina, the decline was largely demand-driven; in Mexico, more supply-driven; and in Brazil, both forces were at play. In all three countries, the expansion of basic education appears to have increased the relative supply of low-skilled labor, narrowing human capital disparities and reducing wage inequality. However, these improvements may partly reflect temporary conditions, such as favorable international markets and post-crisis adjustments, rather than permanent structural change.

Despite recent gains, the region has historically been characterized by low intergenerational mobility, with strong persistence in education and income across generations (Torche, 2014). Yet, recent evidence shows upward trends in educational mobility among younger cohorts, primarily due to the expansion of schooling among disadvantaged groups (Neidhöfer et al., 2018). For instance, Molina Millán et al. (2020) find that exposure to CCTs during early schooling years is associated with higher rates of secondary school completion and increased likelihood of university attendance, suggesting long-term gains in educational attainment.

This trajectory contrasts with that of other regions, where inequality has continued to rise and mobility

has stagnated. Latin America stands out for its recent decline in inequality and increased social mobility among cohorts born in the 1970s and 1980s. These mobility gains have been found to correlate positively with economic growth and progressive public education spending, and negatively with income inequality, poverty, high returns to education, and assortative mating (Neidhöfer, 2019). The study also shows that high inequality restricts mobility for children from disadvantaged backgrounds, while children from more advantaged families are more likely to maintain or improve their relative positions. This association holds even after accounting for cross-country differences and institutional variation.

Mobility patterns, however, differ markedly across countries. Moreover, when children reallocate time toward work or chores, skill accumulation suffers (Borga, 2019; Kassouf et al., 2020). In Uruguay, for example, Leites et al. (2022) find that macroeconomic volatility negatively affects intergenerational earnings mobility. Children whose parents lost jobs during downturns tend to earn less in adulthood, especially those from middle- or upper-income households, a pattern interpreted as the result of lost job-specific human capital and weakened social networks. In Brazil, César et al. (2023) show that labor demand shocks triggered by trade exposure not only depress adult earnings but also adversely affect children's educational and employment outcomes, thereby lowering upward mobility over time.

These studies suggest that while social mobility has improved in some parts of Latin America, parenting decisions remain shaped by long-standing exposure to volatility, persistent inequality, and fragmented state institutions. Even amid recent progress, many families continue to face insecure environments and limited public support. In such contexts, strategies that emphasize control, discipline, and intergenerational bonding may represent adaptive responses to ongoing economic and institutional uncertainty.

These macro-institutional factors offer essential context for understanding parenting in Latin America. The interaction between historical legacies, persistent inequality, and volatility shapes not only the opportunities families face, but also the logic behind their parenting goals and practices. This supports the idea that parenting is best understood as a context-sensitive strategy, one that responds to both long-run institutional legacies and short-run economic constraints.

This broader context motivates the empirical strategy adopted in this chapter. In particular, it suggests that parenting behavior may be associated both with indicators capturing long-run structures of opportunity, such as educational intergenerational persistence, and with measures of contemporaneous inequality and institutional quality, such as income dispersion and governance indicators, each reflecting different dimensions of the environments in which families make childrearing decisions.

1.4 Data and Methods

This section outlines the data sources and analytical approach employed to investigate the relationship between parenting styles, disciplinary methods, and broader economic and institutional factors in Latin America. Utilizing rich microdata from the World Values Survey (WVS) and the Multiple Indicator Cluster Surveys (MICS), combined with country-level measures of governance and inequality, this study adopts a comprehensive strategy to capture both individual-level behaviors and their contextual determinants. The following subsections detail the construction and classification of parenting styles and discipline categories, the institutional and economic indicators integrated into the analysis, and the statistical methods used to uncover empirical associations.

1.4.1 Parenting Styles: Data and Classification

The classification of parenting styles (PS) follows the framework established by Doepke and Zilibotti (2017). This study uses the World Values Survey (WVS) as the primary data source to construct the three parenting categories analyzed.

The WVS[2] is an international research program initiated in 1981 and currently managed by the University of Michigan, USA. It conducts representative, comparative social surveys approximately every five years across nearly 100 countries, covering about 90 percent of the world's population. This large-scale, cross-country dataset encompasses nearly 400,000 interviews globally and spans countries with diverse income levels. The survey includes questions on a wide range of beliefs and values, such as those related to economics, democracy, religion, gender equality, social capital, and subjective well-being.

Following Doepke and Zilibotti (2017), the parenting styles variable is constructed using responses to the question: *"Here is a list of qualities that children can be encouraged to learn at home. Which, if any, do you consider to be especially important? Please choose up to five!"*[3] This question serves as the basis for classifying parenting styles into three mutually exclusive categories: authoritarian, authoritative, and permissive.

Parents who select *obedience* among their chosen qualities are classified as authoritarian. Among the remaining respondents, those who select *hard work* are categorized as authoritative. Finally, respondents who neither select obedience nor hard work but choose *independence* or *imagination* (or both) are labeled permissive.

Table 1.1 summarizes the country and wave coverage of the WVS data used in this study. The sample includes twelve Latin American countries: Argentina, Brazil, Chile, Colombia, Dominican Republic, Ecuador, Guatemala, Mexico, Peru, Puerto Rico, Trinidad and Tobago, and Uruguay, and spans multiple survey waves from the 1990s through the 2020s, with variation in country participation across waves.

[2](Inglehart et al., 2014)

[3]The list of qualities includes independence, hard work, feeling of responsibility, imagination, tolerance and respect for others, thrift and saving money, determination and perseverance, religious faith, unselfishness, and obedience.

Table 1.1: WVS Sample Coverage by Country and Year

Country	Wave/Years					
	2	3	4	5	6	7
Argentina	1991	1995	1999	2006	2013	2017
Brazil	1991	1997	2006	2014	2018	
Chile	1990	1996	2000	2006	2012	2018
Colombia	1998	2012	2018			
Dominican Republic	1996					
Ecuador	2013	2018				
Guatemala	2004	2020				
Mexico	1996	2000	2005	2012	2018	
Peru	1996	2001	2006	2012	2018	
Puerto Rico	1995	2001	2018			
Trinidad and Tobago	2006	2010				
Uruguay	1996	2006	2011	2022		

Source: World Value Survey (1981-2014).

1.4.2 Child Discipline: Data and Classification

The Multiple Indicator Cluster Surveys (MICS) is used to construct three categories of child discipline. MICS is among the largest household survey programs worldwide focused on children and women, covering 116 countries with many surveyed across multiple rounds to produce trend data. The surveys collect information on a wide range of indicators related to children, adolescents, women, and more recently men. Topics include fertility, mortality, contraceptive use, unmet need, maternal and newborn health, female genital mutilation, menstrual hygiene management, child illness and treatment, and child development and nutrition, among others. These cross-sectional surveys are designed to be nationally and subnationally representative, enabling comparisons across countries and over time (Khan and Hancioglu, 2019).

The Child Discipline (CD) module within MICS is adapted from the Conflict Tactics Scale to characterize eleven disciplinary practices in diverse cultural contexts. In earlier waves, the module focuses on one randomly selected child aged 2 to 14, whereas in the latest editions, it covers all children aged 2 to 4[4]. To maintain consistency, this study restricts the sample to one randomly selected child aged 2 to 4 per household. Since the information captured refers to only one child per household at random, it does not capture potential within-household variation in disciplinary practices, and as such, interpretations should be understood at the household level, rather than child-specific.

The main respondent, typically the mother, is asked whether she or anyone else in the household employed any of the following disciplinary methods during the month preceding the interview. These are grouped into three sets: first, non-violent discipline methods, including taking away privileges, explaining the child's wrong behavior, and giving the child something else to do; second, emotional or psychological discipline, such as shouting, yelling, screaming, or calling the child names like dumb or lazy; third, physical discipline, which encompasses shaking the child, spanking or hitting the child on the bottom with a bare

[4]In addition, one randomly selected child aged 5 to 14 is included.

hand, hitting with objects such as belts or sticks, hitting or slapping on the face, head, ears, hand, arm, or leg, and beating the child repeatedly as hard as possible.

These groupings form the basis of three disciplinary categories used in the analysis: non-violent discipline, emotional/psychological discipline, and physical discipline, following Pesando et al. (2024).

Table 1.2 summarizes the countries and survey years included in this analysis. The dataset covers thirteen countries: Argentina, Belize, Costa Rica, Dominican Republic, El Salvador, Guyana, Jamaica, Mexico, Panama, Paraguay, Suriname, Trinidad and Tobago, and Uruguay, spanning from the 2000s through the 2020s.

Table 1.2: MICS Sample Coverage by Country and Year

Country	Years		
Argentina	2011	2020	
Belize	2006	2011	2015
Costa Rica	2011		2018
Dominican republic	2014	2019	
El Salvador	2014		
Guyana	2006	2014	2019
Jamaica	2005	2011	
Mexico	2015		
Panama	2013		
Paraguay	2016		
Suriname	2006	2010	2018
Trinidad and Tobago	2006	2011	
Uruguay	2013		

Source: MICS (2006-2020).

1.4.3 Institutional and Economic Indicators

The economic and institutional indicators utilized in this analysis are grouped into two main categories: governance quality and inequality measures.

The first category comprises governance indicators developed by the World Bank as part of the Worldwide Governance Indicators (WGI) project (Kaufmann et al., 2010). These indicators are measured annually and capture perceptions of governance quality across countries over time. The six dimensions included are as follows:

Control of corruption, which assesses the extent to which public power is exercised for private gain, encompassing both petty and grand corruption as well as the "capture" of the state by elites or private interests; government effectiveness, reflecting perceptions of the quality of public services, the competence and political independence of the civil service, the quality of policy formulation and implementation, and the credibility of the government's commitment to such policies; political stability and absence of violence/terrorism, measuring the likelihood of political instability and politically motivated violence, including terrorism; regulatory quality, capturing the government's ability to formulate and implement policies and regulations that facilitate private sector development; rule of law, gauging confidence in and

adherence to societal rules, including contract enforcement, property rights, police and judicial quality, and the prevalence of crime and violence; and voice and accountability, reflecting the extent of citizens' participation in selecting their government, freedom of expression and association, and media freedom.

The second category concerns inequality. For the analysis of parenting styles, inequality is measured using the ratio of average income in the top decile (decile 10) to that in the bottom decile (decile 1). For child discipline analysis, the income share held by the top 10% of the population is used, depending on data availability across countries and years. Additionally, educational intergenerational persistence is included as a long-term dimension of inequality. These inequality indicators are sourced from CEDLAS (2024), the World Bank's Poverty and Inequality Platform (Bank, 2024), and Neidhöfer et al. (2018), respectively.

All governance and inequality indicators are standardized to facilitate interpretation and integrated at the country-year level for use in the empirical analyses.

1.4.4 Analytical Strategy

This study undertakes a descriptive analysis to investigate the relationships between parenting styles (PS), child discipline (CD), and economic and institutional indicators, drawing on the theoretical and empirical frameworks of Doepke and Zilibotti (2017) and Pesando et al. (2024). Initially, a graphical exploration is conducted to visually assess correlations between parenting and discipline categories and macro-level indicators of inequality, social mobility, and institutional quality. This approach helps to establish broad patterns and potential linkages across countries in Latin America.

Following this descriptive overview, multinomial logistic regression models are employed to quantify the relative likelihood of different parenting style categories, with the authoritarian style serving as the reference group. Analogous specifications are estimated for child discipline outcomes, where physical discipline is used as the reference category. These regressions control for individual respondent characteristics (such as age, education, and socioeconomic status) and include country and survey-wave fixed effects, which absorb time-invariant cross-country differences and common survey-wave shocks. Since the contextual indicators are measured at the country-year level, the coefficients are identified from within-country variation across survey years rather than from cross-country differences. Standard errors are clustered at the country-wave level to account for intra-country correlation. Given the repeated cross-sectional nature of the data and the potential for omitted time-varying factors, the estimates should be interpreted as descriptive associations rather than causal effects. Accordingly, the coefficients capture how within-country variation across survey years in inequality and governance is associated with the relative likelihood of each parenting and discipline outcome.

In line with common practice in cross-country development research, the analyses rely on unweighted statistics. This choice avoids the disproportionate influence of highly populated countries on the results, thereby ensuring that patterns identified are not dominated by a few large nations but instead reflect broader regional tendencies. Consequently, the focus remains on uncovering overarching patterns of parenting and discipline in relation to institutional and economic conditions throughout Latin America.

The theoretical foundation provided by Doepke and Zilibotti (2017) frames parenting styles as strategic adaptations shaped by parental altruism and paternalism in intergenerational preference transmission. Their model highlights the sensitivity of parental investment decisions to economic incentives and social environments, which motivates the investigation of how macro-level factors are associated with parenting behaviors in the region.

1.5 Parenting and Discipline in Latin America: Stylized Facts

This section presents a descriptive overview of parenting styles and child discipline practices across Latin America, drawing on harmonized survey data from the World Values Survey and Multiple Indicator Cluster Surveys. By examining cross-country distributions and temporal trends, the section documents regional variation and broad changes over time in how families raise and discipline children. These stylized facts provide essential context for understanding the social and institutional factors associated with parenting behaviors and set the foundation for the subsequent empirical analysis.

Table 1.3 presents the average distribution of parenting styles by country over all surveyed years, revealing substantial variation across the region. Countries such as Brazil, Chile, Mexico, and Peru show a pronounced dominance of authoritarian parenting styles, each with over 55% of respondents aligning with this approach. Uruguay, while still exhibiting authoritarian parenting as the most prevalent category, displays a notably lower share at approximately 44%, indicating a comparatively greater presence of alternative parenting orientations. Argentina presents a more balanced distribution, with authoritarian parenting at 36.7%, authoritative parenting at 43.6%, and narrower gaps between styles than those observed in most other countries. The difference between the most and least prevalent parenting styles within countries is also sizable. In Peru and Brazil, this gap approaches 50 percentage points, whereas Argentina exhibits a much more even distribution, with differences below 20 percentage points.

Figure 1.2 illustrates the evolution of parenting styles over time in the pooled regional sample. The permissive style follows a U-shaped pattern, declining from about 24% in the early 1990s to 17% by the mid-2000s, remaining close to that level until around 2010, and then rising again to approximately 21% by the early 2020s. The authoritative style declines gradually from roughly 27% at the beginning of the period, reaches about 20% around 2010–2014, and then increases again to around 28% in the most recent period. By contrast, the authoritarian style, which is the most prevalent throughout the sample period, rises from 49% in the early 1990s to a peak of around 61% in the mid-2010s, before declining again to roughly 50% in the latest years. These aggregate trends should be interpreted with caution, as the composition of countries observed changes across waves. Still, they suggest that parenting values in the region have not remained constant over time and that the relative prevalence of authoritarian, authoritative, and permissive orientations has evolved over the period under study.

Table 1.4 reports average child-discipline categories by country. Physical discipline is the most prevalent method in all countries except Uruguay, where non-violent approaches are comparatively more common. Psychological discipline is generally less prevalent than physical discipline across the region, although Jamaica, Suriname, and Trinidad and Tobago stand out as cases in which psychological discipline exceeds non-violent methods. Overall, these patterns indicate that coercive disciplinary methods remain widespread in Latin America, although the degree of reliance on physical punishment differs substantially across countries. This distribution is consistent with settings where family time is constrained and where children's work and household chores may compete with schooling and other developmental inputs (Kassouf et al., 2020; Acosta, 2011).

Figure 1.3 depicts the evolution of child-discipline categories over time. Non-violent discipline rises between 2005 and the mid-2010s and then declines somewhat toward 2020. Psychological discipline remains comparatively stable over the period, fluctuating around 15%. Physical discipline follows the opposite pattern: it declines from about 73% in 2005 to 55% by the mid-2010s and then rises slightly to 58% in the most recent period. As with the parenting-style trends, these aggregate movements should

be interpreted cautiously, given changes in country coverage over time. Nonetheless, they suggest that the balance between coercive and non-coercive discipline has shifted over the period, even if physical punishment remains the dominant form overall.

These stylized facts point to substantial heterogeneity across countries and over time in both parenting styles and disciplinary practices. Authoritarian parenting and physical discipline remain highly prevalent in much of the region, but they coexist with meaningful cross-country differences and some evidence of change over time. The following section examines whether these descriptive patterns remain when observable individual characteristics and country-specific factors are taken into account.

Table 1.3: Parenting style categories distribution by country

Country	Authoritarian	Authoritative	Permissive
Argentina	36.7%	43.6%	19.7%
Brazil	55.4%	35.2%	9.4%
Chile	57.1%	16.1%	26.8%
Colombia	59.9%	11.7%	28.4%
Dominican Rep.	57.2%	30.5%	12.3%
Ecuador	66.9%	18.9%	14.2%
Guatemala	60.7%	22.5%	16.8%
Mexico	61.2%	19.0%	19.8%
Peru	59.8%	27.8%	12.4%
Puerto Rico	58.2%	25.4%	16.4%
Trinidad and Tobago	75.0%	19.9%	5.1%
Uruguay	42.3%	17.0%	40.7%
Total	56.0%	24.5%	19.5%

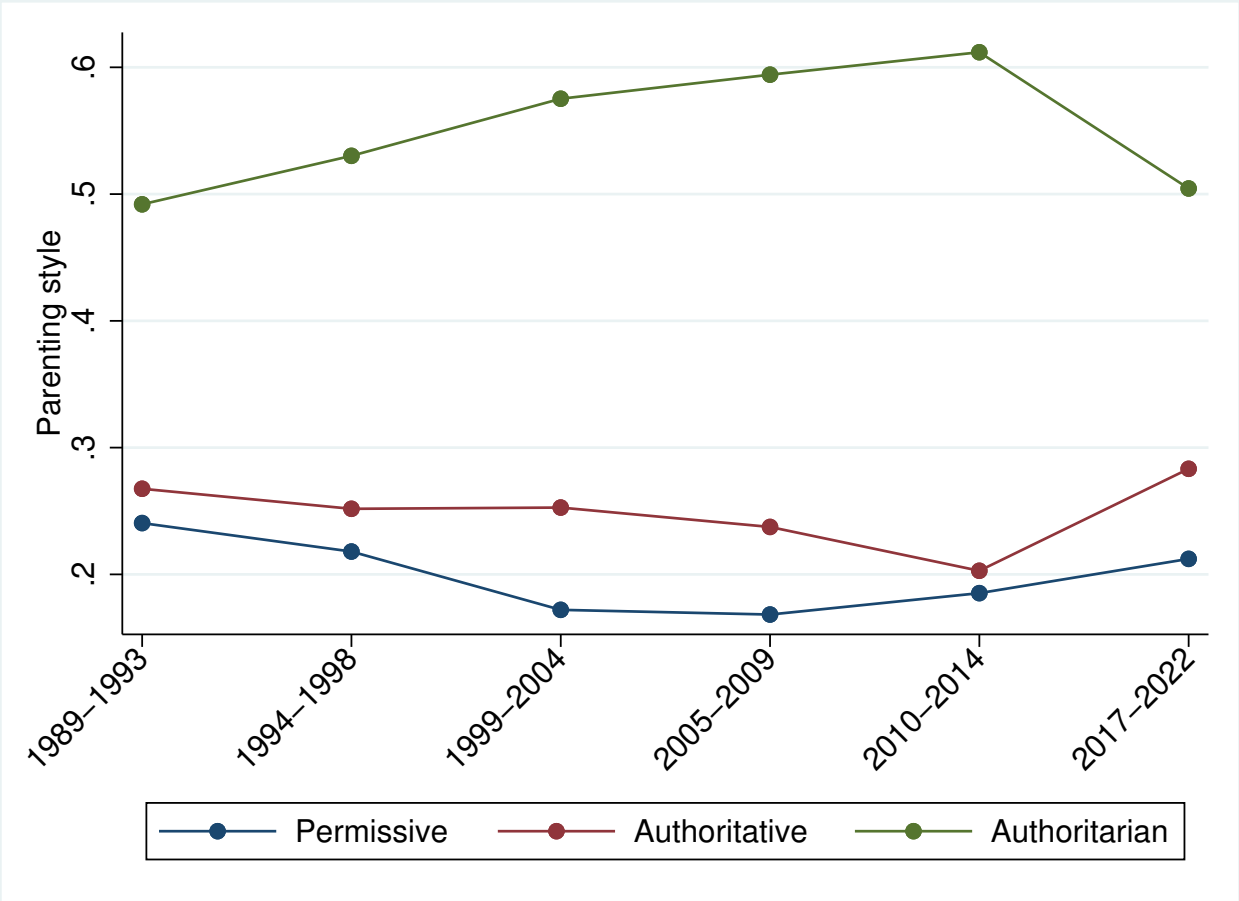
Source: World Value Survey (1981-2014).

Table 1.4: Child discipline categories distribution by country

Country	Non-violent	Psychological	Physical
Argentina	27.8%	21.4%	50.8%
Belize	23.9%	12.9%	63.1%
Costa Rica	42.2%	10.6%	47.3%
Dominican rep.	22.1%	19.9%	58.0%
El Salvador	35.8%	10.3%	53.9%
Guyana	16.2%	14.7%	69.2%
Jamaica	8.2%	11.3%	80.5%
Mexico	29.8%	16.2%	54.0%
Panama	42.2%	14.9%	42.9%
Paraguay	37.5%	10.6%	51.9%
Suriname	8.1%	20.7%	71.2%
Trinidad and Tobago	15.3%	18.6%	66.0%
Uruguay	38.9%	26.7%	34.4%
Total	25.3%	17.0%	57.7%

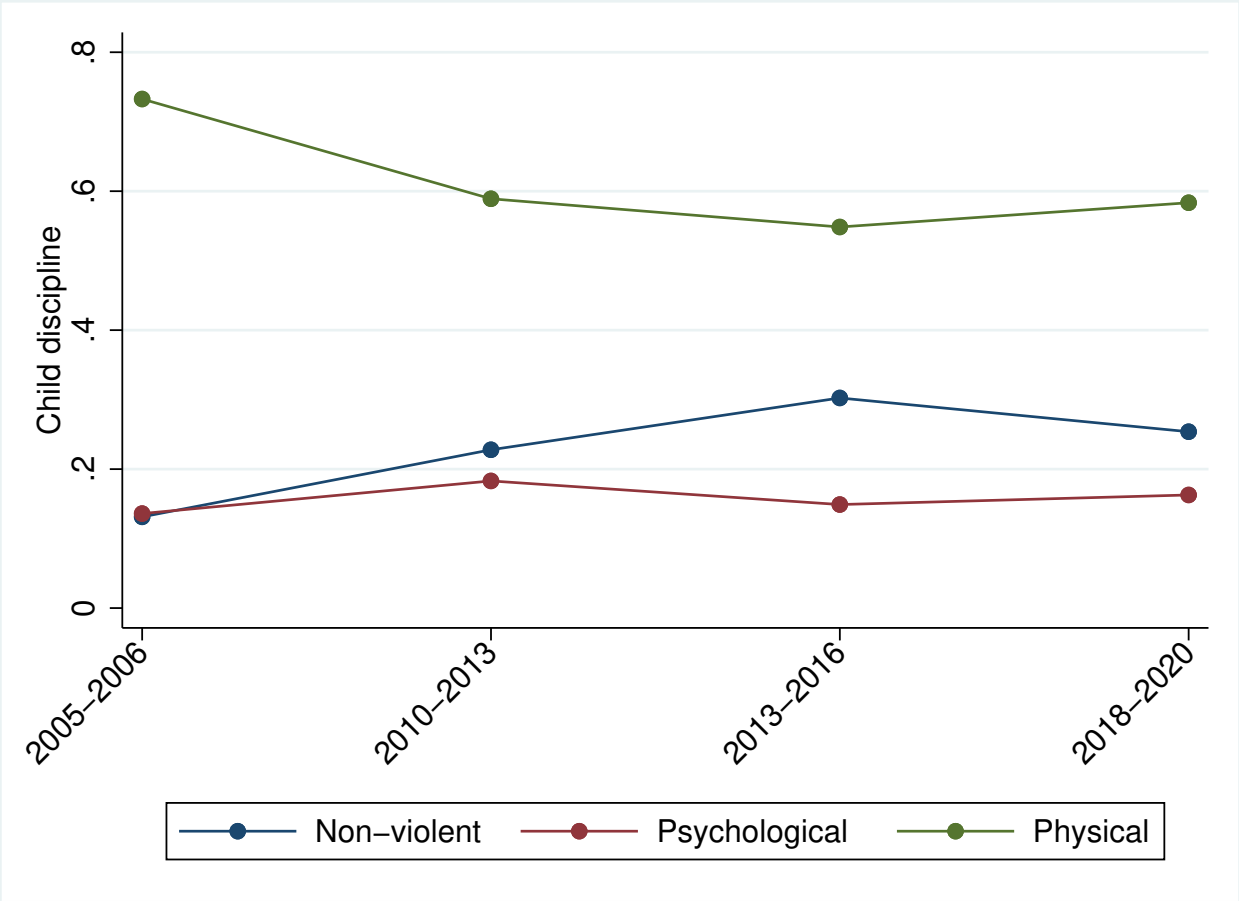
Source: MICS (2006-2020).

Figure 1.2: Evolution parenting styles



Source: World Value Survey (1981-2014).

Figure 1.3: Evolution child discipline



Source: MICS (2006-2020).

1.6 Empirical Associations Between Parenting and Economic and Institutional Conditions

This section examines how parenting styles (PS) and child discipline (CD) are associated with economic and institutional variables, combining descriptive graphical evidence with individual-level multinomial logistic regressions. Figures 1.4 and 1.5 summarize cross-country and country-wave correlations between parenting outcomes and inequality measures, while Figures 1.6 and 1.7 show analogous patterns for governance indicators. Tables 1.5–1.8 complement these figures with regressions that include demographic controls and absorb country and wave fixed effects. This distinction is important, because the figures capture broad cross-country associations, whereas the regressions rely on within-country variation over time and across survey years, and therefore need not reproduce the same patterns mechanically.

The descriptive evidence for parenting styles suggests that more unequal settings tend to display higher shares of authoritarian parenting and lower shares of permissive parenting. This pattern is visible in Figure 1.4, where both the income inequality measure and educational persistence are negatively associated with permissive parenting, while authoritarian parenting appears comparatively more prevalent in the upper part of the inequality distribution. However, once individual-level regressions are considered, the relationship

becomes more nuanced and depends critically on which dimension of inequality is used. Income inequality, measured by the ratio of mean income in the top decile to that in the bottom decile, is negatively associated with authoritative parenting, while it is not significantly related to permissive parenting in the controlled specifications. By contrast, educational persistence is strongly negatively associated with both authoritative and permissive parenting. This divergence is substantively important. It suggests that contemporaneous income dispersion and longer-run mobility constraints are not interchangeable proxies for the environment in which parenting decisions are made. The latter appears to matter more systematically for parenting styles, consistent with the idea that parental strategies respond not only to current inequality, but also to the extent to which effort, education, and value transmission are expected to shape children's future prospects. This interpretation is closely aligned with Doepke and Zilibotti (2017), who emphasize that parenting styles respond to the returns to effort and to the broader environment of mobility and opportunity. In that sense, the stronger association between educational persistence and less permissive or less authoritative styles is consistent with a setting in which parents perceive children's trajectories as more tightly constrained and therefore place less weight on autonomy-promoting strategies. This interpretation also fits the broader Latin American context, where inequality has remained high despite episodes of decline and where mobility gains have been uneven across countries and cohorts (Gasparini and Cruces, 2021; Neidhöfer, 2019).

The governance results for parenting styles are also informative, but they are not uniform across dimensions. In the descriptive figures, better governance is generally associated with lower authoritarian parenting and higher permissive or authoritative parenting. Yet the regression evidence shows that these relationships differ depending on the specific indicator considered. Control of corruption and government effectiveness are positively associated with authoritative parenting, while voice and accountability and political stability are more clearly associated with permissive parenting. Regulatory quality is positively associated with authoritative parenting but negatively associated with permissive parenting. These patterns suggest that institutional quality does not operate as a single undifferentiated dimension. Rather, different aspects of governance appear to affect different margins of parenting behavior. Indicators more closely related to state capacity and policy implementation seem to be associated with structured, effort-oriented parenting, whereas indicators related to political openness and participation are more strongly associated with autonomy-promoting styles. This is consistent with the theoretical ambiguity of authoritative parenting in Doepke and Zilibotti (2017): it combines control with support and may therefore emerge in environments where parents still see returns to guidance and supervision, but do not rely on the harsher forms of direct restriction more characteristic of authoritarian parenting. More generally, the heterogeneity across governance dimensions is in line with the Latin American institutional landscape, where uneven state capacity, fragmented provision, and differences in the quality of accountability structures coexist within the region rather than moving together in a single linear fashion (Kaufmann et al., 2000; Angeles and Elizalde, 2017).

The evidence for disciplinary practices is even more clearly dependent on the dimension of inequality considered. The descriptive plots in Figure 1.5 show that physical discipline tends to be more common in more unequal settings, while non-violent and psychological discipline display less stable or more heterogeneous patterns. The regressions confirm that the two inequality measures do not point in the same direction. Higher income inequality is associated with a lower relative use of both non-violent and psychological discipline compared with physical discipline, which implies a greater relative prevalence of physical punishment in more unequal contexts. By contrast, higher educational persistence is positively associated

with both non-violent and psychological discipline relative to physical discipline. This contrast is central to the interpretation of the results. If income inequality is more closely related to short-run stress, resource pressure, or instability, then its association with a greater reliance on physical discipline is consistent with the literature linking economic hardship to harsher childrearing environments. In particular, Brown and De Cao (2024) show that unemployment can worsen harmful parenting environments through stress, worsening mental health, and deteriorating time quality with children rather than only through income losses. At the same time, the positive association between educational persistence and non-violent and psychological discipline suggests that long-run inequality of opportunity may operate through a different margin, one that does not map straightforwardly into greater physical coercion. In other words, long-run immobility and short-run economic inequality may shape discipline through distinct channels. This is also consistent with Pesando et al. (2024), who show that disciplinary practices vary systematically with household and contextual characteristics and should not be interpreted as a simple one-dimensional reflection of disadvantage. In the Latin American context, where household stress, children's work, and time pressures continue to interact with unequal access to opportunity, this distinction between shorter-run and longer-run constraints is particularly relevant (Kassouf et al., 2020; Acosta, 2011; Gasparini and Cruces, 2021).

A similarly heterogeneous pattern emerges for governance and child discipline. Some governance indicators, most notably government effectiveness and regulatory quality, are positively associated with non-violent discipline relative to physical discipline. Others, such as control of corruption or political stability, show the opposite sign. Psychological discipline often moves differently from non-violent discipline, and in some specifications in the opposite direction. This lack of uniformity matters for interpretation. It implies that better governance does not simply reduce all coercive forms of discipline and increase all non-violent forms simultaneously. Instead, institutional quality appears to shape disciplinary behavior along multiple margins. Some governance dimensions may support less physically coercive forms of childrearing by reducing stress, improving public provision, or increasing predictability in everyday life. Others may be associated with changes in how authority is exercised within households without necessarily reducing psychological discipline to the same extent. For this reason, the governance results for discipline should be read as multidimensional rather than monotonic. This is particularly plausible in a region where institutional quality varies not only in average level but also in composition, with some countries combining improvements in administrative capacity with persistent deficits in accountability, trust, or legal enforcement (Kaufmann et al., 2000; Rodrik et al., 2004; O'Donnell, 1994).

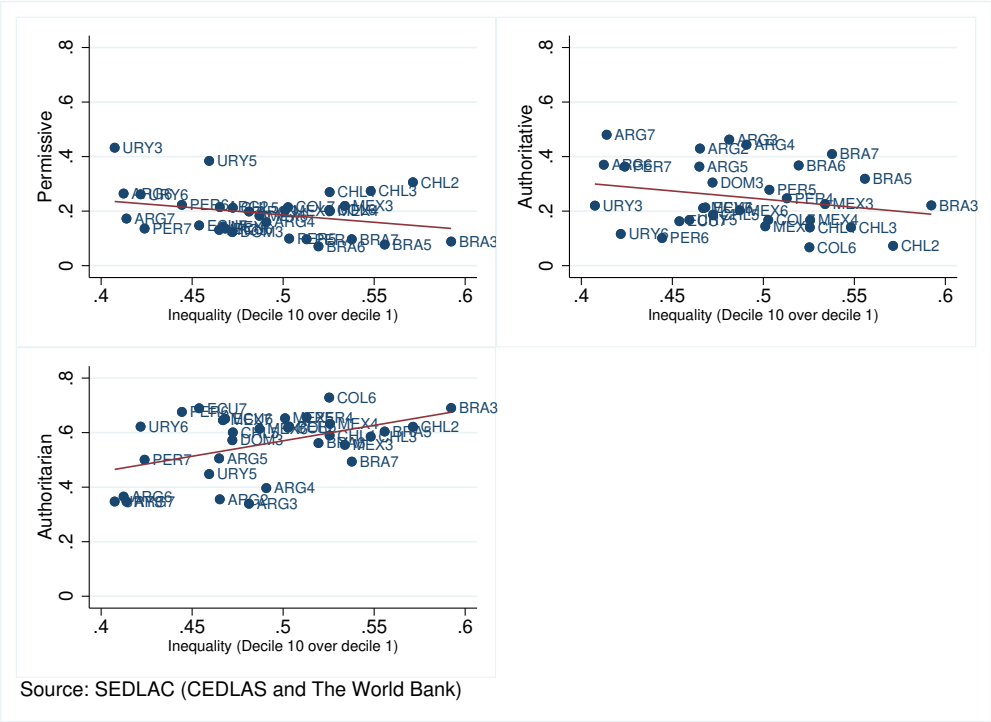
Revisiting the descriptive patterns discussed in Section 1.5, the cross-country evidence remains broadly consistent with this interpretation. Countries such as Brazil, Chile, Mexico, and Peru display high authoritarian parenting shares, whereas Uruguay and, to a lesser extent, Argentina show more permissive or authoritative profiles. These patterns are consistent with broader regional differences in inequality, social protection, and institutional capacity (Gasparini and Cruces, 2021; Leites et al., 2022). Likewise, physical discipline remains highly prevalent in several settings, while countries such as Uruguay show comparatively lower reliance on physical punishment. The descriptive trends over time should be interpreted cautiously, given changing country composition across waves, but they are consistent with the view that parenting behavior evolves alongside broader institutional and policy changes, including the expansion of social protection and positive-parenting agendas in parts of the region (Molina Millán et al., 2020; Hallers-Haalboom, 2015).

The results highlight two general points. First, the distinction between descriptive cross-country patterns

and controlled individual-level estimates is empirically meaningful. The figures summarize broad regional regularities, but the regressions show that these regularities become more differentiated once demographic composition, country fixed effects, and wave effects are taken into account. Second, both inequality and governance are multidimensional, and their associations with parenting behavior depend on the specific mechanisms each indicator is likely to capture. For parenting styles, longer-run mobility constraints, proxied here by educational persistence, appear more strongly associated with parental orientations than contemporaneous income inequality. For disciplinary practices, by contrast, short-run inequality and governance conditions appear more closely linked to the relative prevalence of physical punishment, while other forms of discipline respond less uniformly.

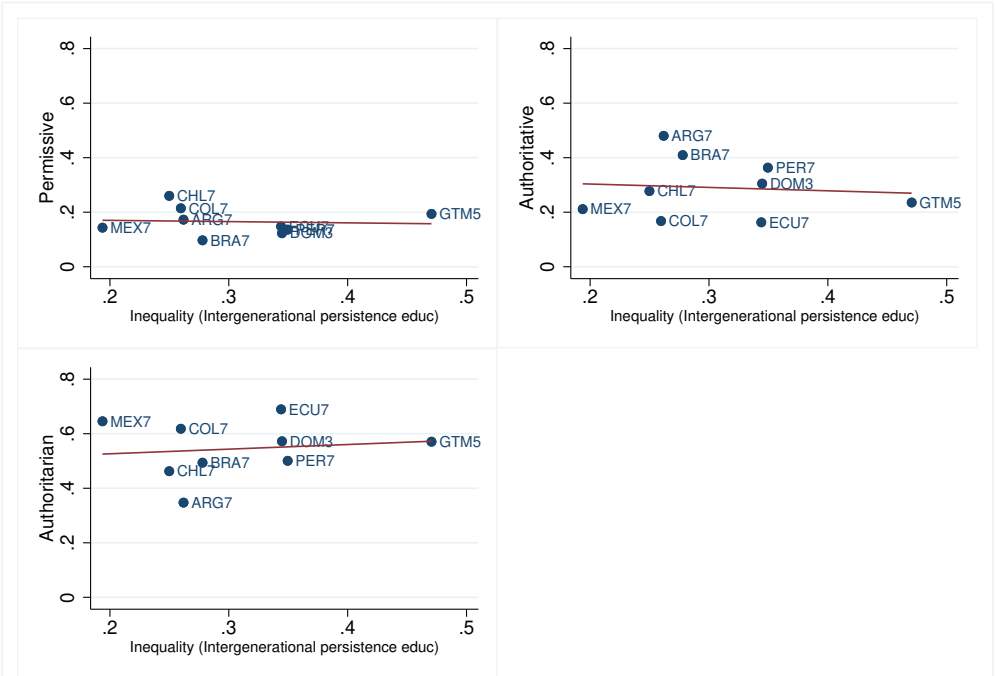
These patterns are broadly consistent with the theoretical perspective that parenting is adaptive and responds to the economic and institutional conditions, but they also suggest that such adaptation takes different forms depending on the dimension of parenting considered. Parenting styles reflect broad intergenerational strategies and beliefs about children's future prospects, whereas disciplinary practices appear more reactive to immediate constraints and institutional conditions. This distinction helps explain why the associations are clearer and more systematic for some outcomes than for others. More generally, the results support the view that family behavior in Latin America is shaped by both long-run structures of opportunity and short-run institutional and economic constraints, even if the empirical relationships are neither uniform nor monotonic across all measures. In that sense, the findings resonate with a regional history in which persistent inequality, uneven state capacity, and incomplete public provision have repeatedly shifted risk management and socialization functions onto the family. This distinction is also consistent with evidence that culturally rooted parenting preferences shape the quality and composition of parental time investments, affecting both parent–child interactions and how time is allocated across activities (Brilli and Moriconi, 2024).

Figure 1.4: Inequality Indicators and Parenting Styles (WVS)



Source: SEDLAC (CEDLAS and The World Bank)

(a) Income Inequality

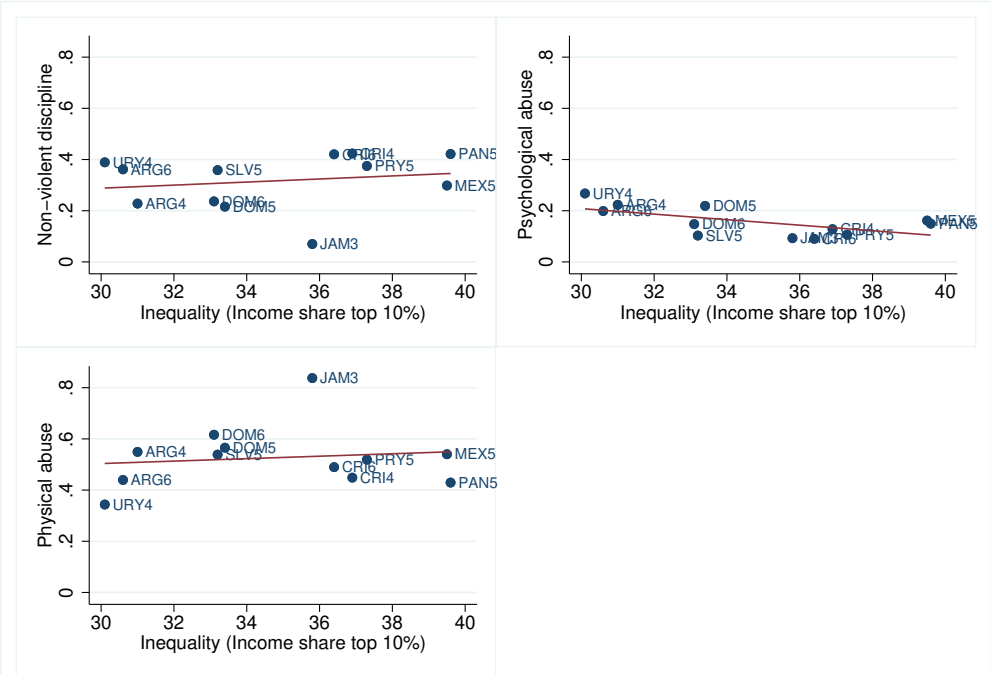


Source: Neidhöfer et al. (2018)

(b) Educational Persistence

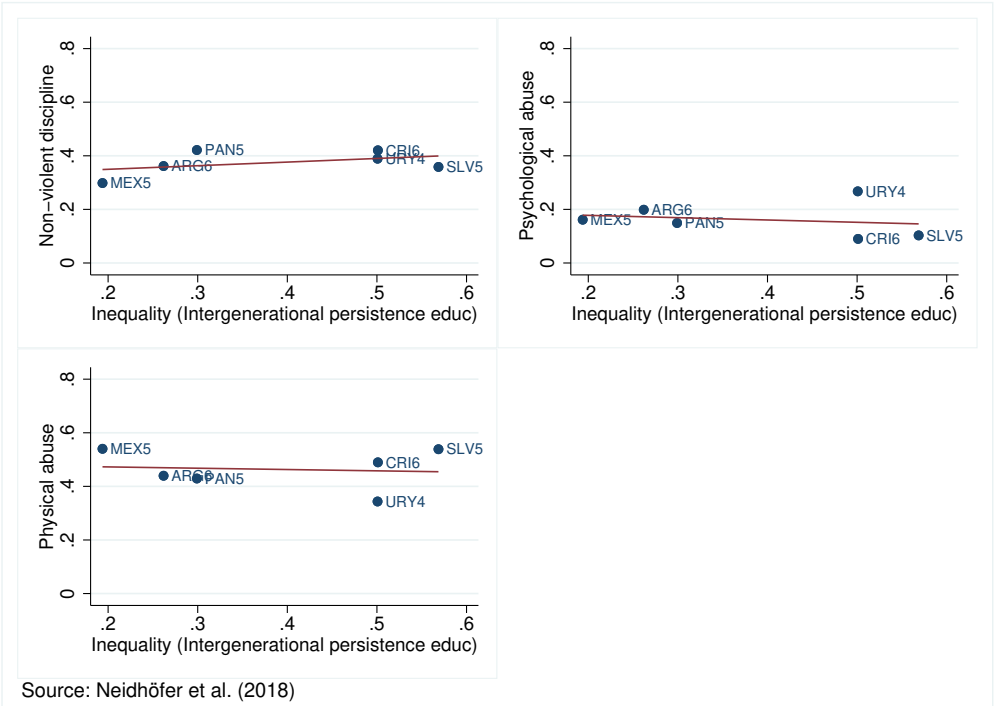
Source: World Value Survey (1981-2014), SEDLAC and Neidhöfer et al. (2018).

Figure 1.5: Inequality Indicators and Child Discipline (MICS)



Source:

(a) Income Inequality

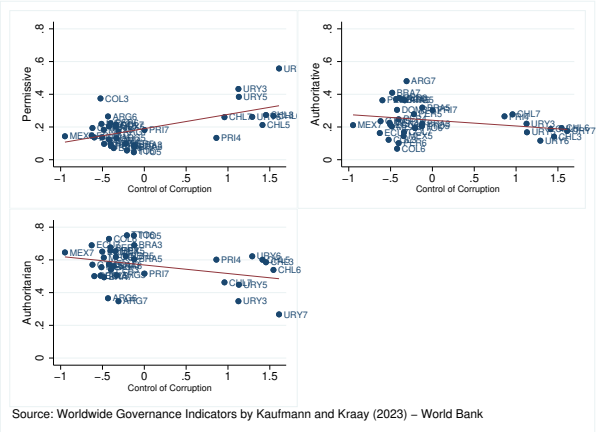


Source: Neidhöfer et al. (2018)

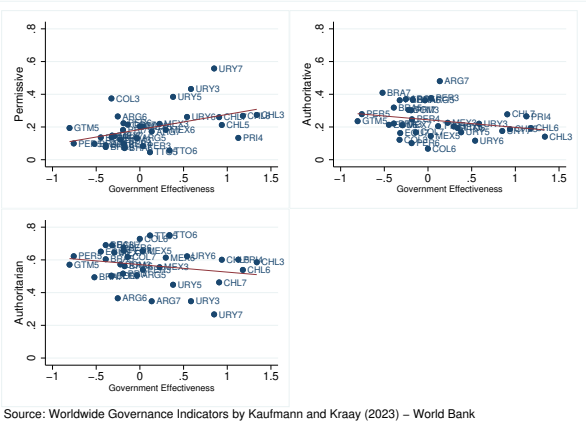
(b) Educational Persistence

Source:MICS (2006-2020), World Bank and Neidhöfer et al. (2018).

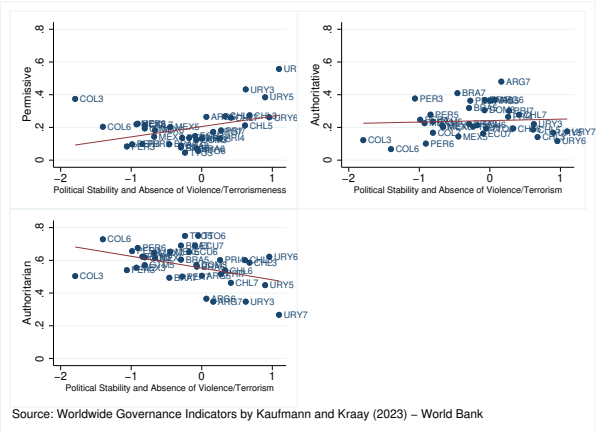
Figure 1.6: Governance Quality Indicators and Parenting Styles (WVS)



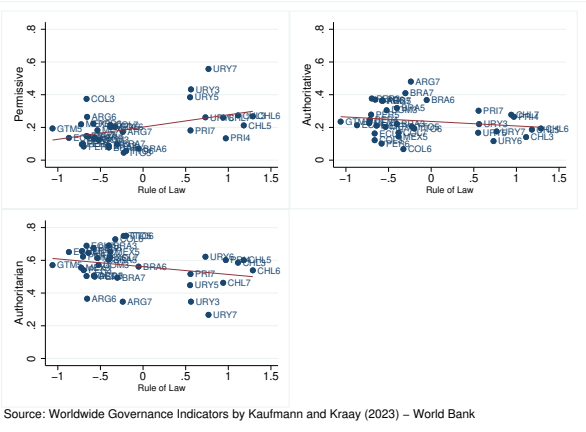
(a) Control of Corruption



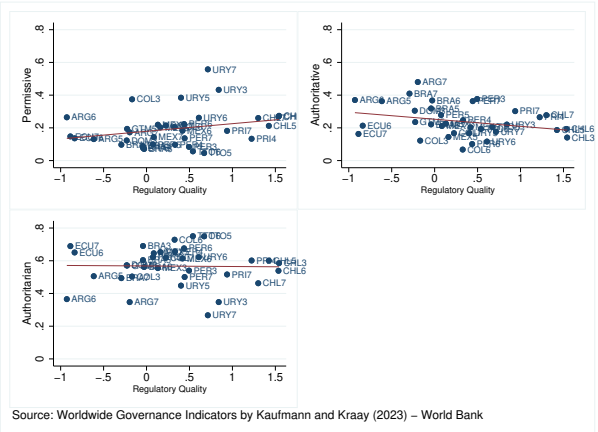
(b) Government Effectiveness



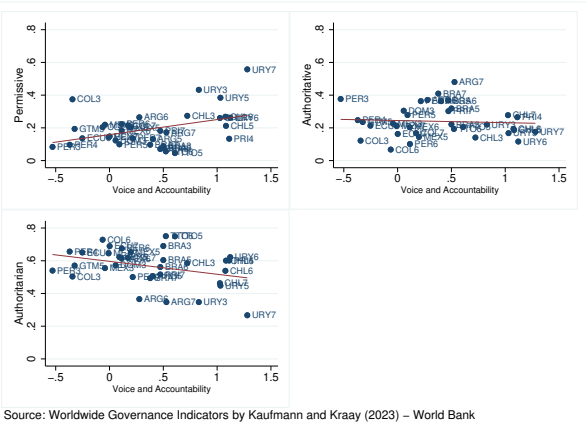
(c) Political Stability



(d) Regulatory Quality



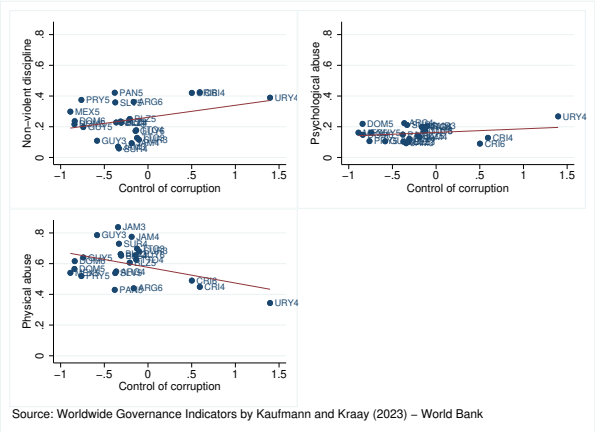
(e) Rule of Law



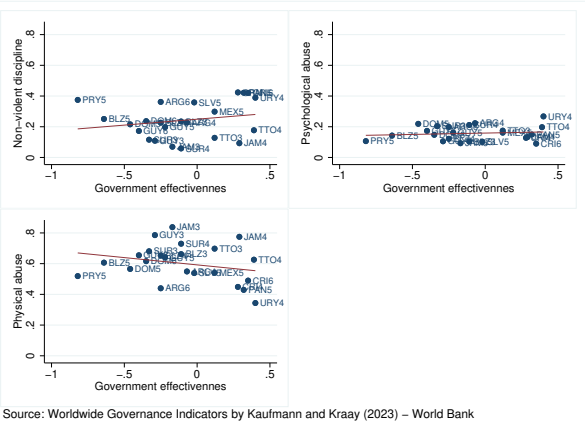
(f) Voice and Accountability

Source: World Value Survey (1981-2014), Worldwide Governance Indicators by Kaufmann and Kraay (2023) World Bank

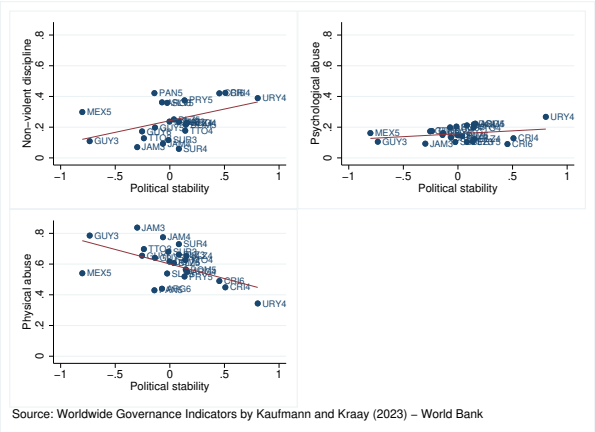
Figure 1.7: Governance Quality Indicators and Child Discipline (MICS)



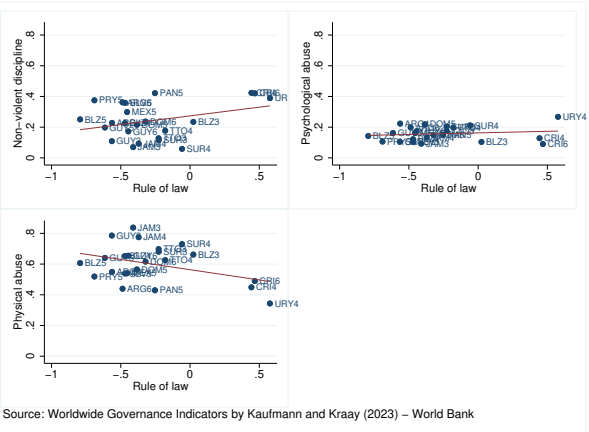
(a) Control of Corruption



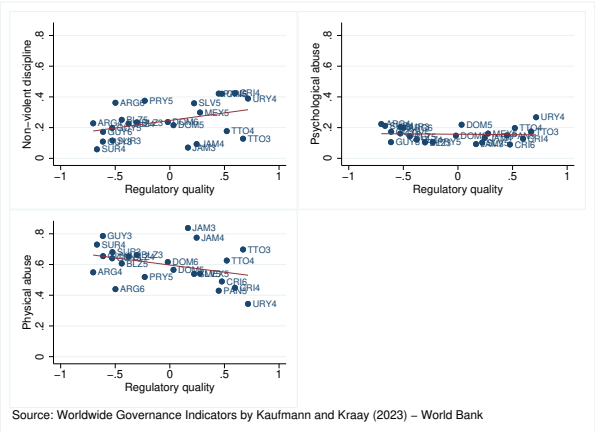
(b) Government Effectiveness



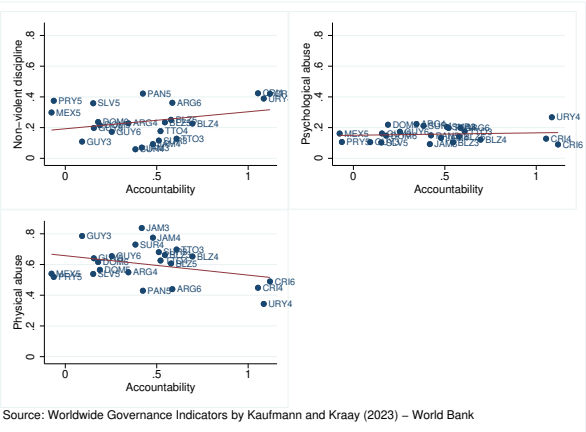
(c) Political Stability



(d) Regulatory Quality



(e) Rule of Law



(f) Voice and Accountability

Source:MICS (2006-2020), Worldwide Governance Indicators by Kaufmann and Kraay (2023) World Bank

Table 1.5: Governance on parenting styles

	(1)	(2)	(3)	(4)	(5)	(6)
Parenting Style	Control of corruption	Government effectivennes	Political stability	Rule of law	Regulatory quality	Accountability
Authoritative	1.314*	0.817*	0.072	0.046	0.645**	0.378
	(0.715)	(0.462)	(0.559)	(1.142)	(0.251)	(0.807)
Permissive	0.540	0.444	0.259*	-0.248	-0.767***	1.806***
	(0.361)	(0.299)	(0.155)	(0.383)	(0.236)	(0.350)
N	26,762	26,762	26,762	26,762	26,762	26,762

Dependent variables are authoritative and permissive parenting style on the rows, authoritarian is the reference category. Independent variables are Governance indicators on the columns. Multinomial logistic models includes controls for gender, age, age squared, logarithm of GDP per capita (based on expenditure-side real GDP at chained PPPs, from Penn World Table 9.1). Wave and country fixed effects. Standard error are clustered at country-wave level. *,**,*** indicate statistical significance at the 10%, 5% and 1% level, respectively.

Table 1.6: Inequality on parenting styles

	(1)	(2)
Parenting Style	Inequality (Decile 10 over decile 1)	Intergenerational educ. persistence
Authoritative	-0.013*	-26.563***
	(0.007)	(0.702)
Permissive	-0.004	-65.851***
	(0.007)	(0.952)
N	30,602	7,402

Dependent variables are authoritative and permissive parenting style on the rows, authoritarian is the reference category. Independent variables are inequality indicators on the columns. Multinomial logistic models includes controls for gender, age, age squared, logarithm of GDP per capita (based on expenditure-side real GDP at chained PPPs, from Penn World Table 9.1). Wave and country fixed effects. Standard error are clustered at country-wave level. *,**,*** indicate statistical significance at the 10%, 5% and 1% level, respectively.

Table 1.7: Governance on children discipline

	(1)	(2)	(3)	(4)	(5)	(6)
Child Discipline	Control of corruption	Government effectivennes	Political stability	Rule of law	Regulatory quality	Accountability
Non-violent	-0.242***	0.651***	-0.876***	-0.681***	2.605***	-2.870***
	(0.009)	(0.023)	(0.032)	(0.025)	(0.094)	(0.103)
Psychological	0.917***	-2.464***	3.314***	2.577***	-9.855***	10.860***
	(0.010)	(0.026)	(0.035)	(0.027)	(0.105)	(0.115)
N	74,554	74,554	74,554	74,554	74,554	74,554

Dependent variables are non-violent and psychological discipline on the rows, physical is the reference category. Independent variables are Governance indicators on the columns. Multinomial logistic models includes controls for gender, age, age squared, income logarithm of GDP per capita (based on expenditure-side real GDP at chained PPPs, from Penn World Table 9.1). Wave and country fixed effects. Standard error are clustered at country-wave level. *,**,*** indicate statistical significance at the 10%, 5% and 1% level, respectively.

Table 1.8: Inequality on children discipline

	(1)	(2)
Child Discipline	Inequality (Income share top 10%)	Intergenerational educ. persistence
Non-violent	-0.017***	0.917***
	(0.001)	(0.054)
Psychological	-0.079***	3.872***
	(0.001)	(0.186)
N	58,016	24,619

Dependent variables are non-violent and psychological discipline on the rows, pysical is the reference category. Independent variables are inequality indicators on the columns. Multinomial logistic models includes controls for gender, age, age squared, income logarithm of GDP per capita (based on expenditure-side real GDP at chained PPPs, from Penn World Table 9.1). Wave and country fixed effects. Standard error are clustered at country-wave level. *,**,*** indicate statistical significance at the 10%, 5% and 1% level, respectively.

1.7 Conclusion

This chapter has examined how parenting styles and child disciplinary practices in Latin America are associated with economic inequality and institutional quality. The evidence indicates that these relationships are neither uniform nor fully captured by a single measure of country-level conditions. Rather, the results vary depending on whether one considers parenting styles or disciplinary practices, and on whether inequality is measured through contemporaneous income dispersion or longer-run indicators of intergenerational persistence.

For parenting styles, the results suggest that longer-run constraints on mobility are more strongly associated with parental orientations than contemporaneous income inequality once country-level differences are taken into account. In particular, educational persistence is more consistently associated with lower relative prevalence of permissive and authoritative parenting, which is in line with the idea that parents adjust long-run childrearing strategies in response to perceived opportunity structures and expected returns to effort. By contrast, the relationship between parenting styles and current income inequality is weaker and less stable in the controlled specifications.

For disciplinary practices, the patterns differ. Income inequality is more clearly associated with a greater relative prevalence of physical punishment, while educational persistence points in a different direction, suggesting that short-run economic stress and long-run inequality of opportunity may shape discipline through distinct channels. Governance indicators also display heterogeneous associations across outcomes, indicating that institutional quality does not operate as a single dimension. Some aspects of governance are more closely related to autonomy-promoting or structured parenting styles, whereas others appear more relevant for the relative use of non-violent versus coercive discipline.

The descriptive evidence further shows that parenting and discipline vary substantially across countries in the region. Countries such as Brazil, Chile, Mexico, and Peru display high shares of authoritarian parenting, whereas Uruguay and, to a lesser extent, Argentina show more permissive or authoritative profiles. Physical discipline also remains highly prevalent across much of the region, although with substantial cross-country variation. While changes over time should be interpreted cautiously because of shifting country composition across survey waves, the descriptive patterns suggest that parenting behavior has not remained fixed and may evolve alongside broader institutional and social changes.

These findings are consistent with the view that parenting is influenced by the environment in which families operate, as emphasized by Doepke and Zilibotti (2017), but they also show that this relationship is multidimensional. Parenting styles appear to reflect broader intergenerational strategies and beliefs about children's future prospects, whereas disciplinary practices are more closely linked to immediate constraints and stressors. This distinction helps explain why the empirical relationships differ across outcomes and why the same factor need not have the same association with all dimensions of parenting.

More broadly, the chapter highlights the importance of analyzing family behavior in Latin America within the context of persistent inequality, uneven state capacity, and incomplete public provision. Although the analysis is descriptive and does not establish causal effects, it documents systematic associations between macro-level environments and parenting outcomes. These patterns suggest that inequality, mobility constraints, and institutional quality may all play a role in shaping the context in which parenting decisions are made. Understanding those environments is therefore important for understanding how family behaviors are formed and how they may contribute to the reproduction, or attenuation, of inequality across generations.

Chapter 2

The Psychological Cost of Filial Duty: Maternal Expectations and Teen's Socioemotional Development[1]

Abstract

Drawing on unique longitudinal data from the Young Lives project in Peru (Rounds 4 and 5) that records information on maternal expectations regarding future old-age support, this paper tests a novel hypothesis. It examines whether heightened maternal expectations for elderly care are associated with adolescents' socio-emotional development via increased psychological strain and perceived filial burden. Socio-emotional development is identified using a battery of standardized psychological scales that measure key intra and inter personal constructs, including self-efficacy, self-esteem, pride, and the quality of peer relationships. To address concerns regarding unobserved heterogeneity and reverse causality, a fixed-effects panel data model and a two-stage least squares instrumental variable approach is employed using local female labor market instability as the exclusion restriction. Results show that mothers' expectations for elderly support have a significantly negative causal effect on adolescents' socio-emotional development. These findings underscore that increasing economic stability in low and middle-income countries can reduce dependency on familial intergenerational transfers, mitigating the psychological burden placed on children in poor families.

2.1 Introduction

Socio-emotional skills, often referred to as non-cognitive skills, such as self-efficacy, self-esteem, and the quality of social relationships, are critical determinants of individual success and well-being across the life course (Heckman et al., 2006; Heckman and Kautz, 2012; Cobb-Clark et al., 2022). These skills shape educational attainment, labor market trajectories, and health outcomes, complementing cognitive abilities in the formation of human capital (Deming, 2017; Algan et al., 2022; Sorrenti et al., 2025). Recent economic literature emphasizes that adolescence represents a particularly sensitive period for the consolidation of these traits, as individuals develop autonomy, identity, and social relationships, and socio-emotional skills remain

[1]The author thanks the participants of the Alumni Workshop – National University of La Plata, 1st edition, and the SITES Workshop in Development Economics, 14th edition, for their valuable contributions and comments.

malleable during this stage of the life course (Alan and Kubilay, 2025; Colombo et al., 2025; Mangiavacchi et al., 2025).

Parental influences play a central role in shaping children's socio-emotional development. Beyond material investments, parental beliefs affect children's internal working models, emotional regulation, and perceptions of future opportunities (Albanese et al., 2016; Giménez-Nadal et al., 2019; Nikolova and Nikolaev, 2021; Nicoletti et al., 2024)[2]. Parental aspirations and expectations also influence children's cognitive and non-cognitive development (Doepke and Zilibotti, 2017; Bhalotra et al., 2025). During adolescence, when children become increasingly aware of family circumstances and future responsibilities, expectations regarding children's future support of their parents may further shape socio-emotional development.

Despite the extensive body of work in household economics that assigns a central role to expectations of future support from children in fertility, investment, and intergenerational decision making, particularly in developing countries where formal insurance and pension systems are limited (Becker, 1992; Becker et al., 2016), the literature has, to date, not explicitly examined the potential negative effects of these expectations on child development. Expectations of future support from children, such as financial assistance, time-intensive care, or co-residence in adulthood, are a central feature of family organization in contexts where public systems of long-term care and old-age security are limited. In such settings, families rely heavily on informal arrangements, and caregiving responsibilities are implicitly anticipated and negotiated within the household long before they are realized (Pezzin and Schone, 1999).

The literature documents that elderly care responsibilities are related to family norms (Klimaviciute et al., 2017) and have important consequences for adult children's labor supply, employment continuity, and time allocation (Crespo and Mira, 2014), and that caregiving burdens are unevenly distributed within families and strongly gendered, with women disproportionately providing care and bearing its associated economic and opportunity costs (Vitellozzi and Giannelli, 2024). In particular, daughters are more likely to assume caregiving responsibilities, and the allocation of care often reflects intrafamily bargaining and coordination among siblings (Stöhr, 2015; Bergeot, 2024). While these studies focus on realized caregiving arrangements and adult outcomes, they highlight a broader institutional context in which expectations of intergenerational support are formed. What remains largely unexplored is how the anticipation of such future responsibilities shapes children's and adolescents' socio-emotional development, potentially affecting well-being and behavior long before any direct care is provided.

This paper aim at filling this gap exploring the relation between maternal expectations of future support on adolescents' socio-emotional development taking advantage of specific data on maternal expections for future help collected in the Young Lives Survey in Peru, a context characterized by high female labor informality, limited access to stable and contributory employment, and strong norms of familial reciprocity (Abad and Maurer, 2025; Bosch et al., 2025). In such settings, expectations of support from children constitute a salient component of family decision-making.

To study the relationship between maternal expectations and adolescents' socio-emotional well-being, the empirical strategy combines two complementary identification approaches. First, panel specifications with child fixed effects exploit within-child variation in maternal expectations over time, absorbing all time-invariant child and household characteristics—including persistent family norms, baseline ability, and stable caregiver traits. Second, to strengthen causal interpretation and address concerns regarding reverse causality and time-varying unobservables, the analysis leverages an instrumental variables (IV) approach.

[2]See Mangiavacchi and Piccoli (2024) for a comprehensive review of the literature on parenting behaviors and children's wellbeing.

Maternal expectations are instrumented using plausibly exogenous variation in local female labor-market instability, arising from differential exposure to national sectoral shocks interacted with pre existing local employment structures. In this framework, labor market instability affects women's perceived economic security and, consequently, their anticipated reliance on their children in adulthood, providing a source of exogenous variation in maternal expectations that is unlikely to be directly related to children's developmental outcomes.

Two primary findings emerge from the analysis. First, enhanced stability in local female labor-market conditions is associated with a reduction in maternal expectations of future support from children. This result is consistent with a diminished reliance on intergenerational insurance as subjective economic security improves. Second, higher maternal expectations of future support exert a detrimental impact on adolescents' socio-emotional development. Both fixed-effects and instrumental-variable (IV) estimates reveal substantial declines in self-efficacy, self-esteem, and the quality of peer relationships. These patterns suggest that the anticipation of future filial obligations may undermine adolescents' sense of autonomy and psychological well-being. Furthermore, the negative effects extend to math test scores, indicating that the consequences of maternal expectations are not restricted to non-cognitive domains but impose broader human capital costs associated with anticipated responsibility.

The remainder of the paper is organized as follows. Section 2.2 describes the empirical strategy, introducing the baseline child fixed-effects specifications, the discussion of potential mechanisms, and the complementary instrumental-variable approach based on female labor-market shocks. Section 2.3 presents the Young Lives and ENAHO data, the construction of socio-emotional and caregiver indexes, and descriptive statistics. Section 2.4 reports the results, including heterogeneous effects by maternal agency and pride. Section 2.5 concludes.

2.2 Empirical Strategy

This section outlines the empirical strategy used to study the relationship between maternal expectations of future support and children's socio-emotional development. The analysis combines panel fixed-effects specifications, which constitute the core empirical design of the paper, with a complementary instrumental-variable approach that links maternal expectations to exogenous variation in local female labor-market instability. In addition, the section discusses potential mechanisms that may help interpret the estimated relationships.

The main empirical challenge in estimating the effect of maternal expectations on children's socio-emotional outcomes is endogeneity. Expectations reported by the main caregiver may be correlated with unobserved child characteristics, household dynamics, or caregiver traits that also shape children's emotional development. To address these concerns, the baseline empirical strategy relies on panel specifications with child fixed effects.

By exploiting within-child variation over time, child fixed effects absorb all time-invariant unobserved heterogeneity at the child and household level, including stable traits such as baseline ability, temperament, persistent family norms, and long-run characteristics of the main caregiver. Identification is therefore driven by changes over time in maternal expectations reported by the main caregiver and their association with changes in socio-emotional outcomes for the same child. While this strategy does not eliminate bias from time-varying unobservables at the caregiver or household level, it substantially narrows the scope for

confounding relative to pooled cross-sectional estimates and provides a strong baseline design for studying the role of expectations.

Formally, the baseline specification is given by:

$$Y_{it} = \beta \, \mathrm{E}_{it} + \mathbf{X}_{it}'\gamma + \alpha_i + \lambda_t + \varepsilon_{it}. \tag{2.1}$$

where Y_{it} denotes standardized socio-emotional outcomes for child i at time t, E_{it} captures maternal expectations of future financial support from the child, $\mathbf{X}_{it}$ is a vector of time-varying controls, α_i are child fixed effects, and λ_t are survey round fixed effects.

While the fixed-effects strategy addresses endogeneity arising from time-invariant unobserved heterogeneity, it does not directly speak to the structural determinants of maternal expectations. To shed light on the broader context in which these beliefs are formed, the analysis complements the fixed-effects results with an instrumental-variable exercise based on exogenous variation in local female labor-market instability.The empirical specification in this second case is a two-stage least squares (2SLS) specification defined as follows:.

The first-stage equation:

$$\mathrm{E}_{it} = \delta Z_{dt} + \mathbf{X}_{it}'\alpha + \lambda_t + \nu_{it}, \tag{2.2}$$

The second-stage equation:

$$Y_{it} = \beta \widehat{\mathrm{E}}_{it} + \mathbf{X}_{it}'\gamma + \lambda_t + u_{it}. \tag{2.3}$$

where Z_{dt} is a shift-share measure of exposure to female labor-market instability (measured as sectoral employment volatility), constructed by interacting department-level female employment shares by sector in 2013 with sector-level employment volatility at the national level over the period 2012–2019. A leave-one-out procedure is employed to ensure that sectoral volatility is not mechanically driven by local employment dynamics.

This design follows the canonical Bartik approach (Goldsmith-Pinkham et al., 2020), in which local exposure to aggregate shocks is determined by pre-existing sectoral composition. The strategy has been widely used to study the local effects of labor-demand and trade shocks, including in settings where treatment intensity is otherwise endogenous (Autor et al., 2013) and recent methodological contributions clarify that identification relies on the exogeneity of the aggregate shocks and the predetermined nature of local exposure shares (Goldsmith-Pinkham et al., 2020).

In this study, sectoral volatility is measured at the national level, while exposure shares are fixed prior to the period of analysis. Identification relies on differential exposure to common national shocks interacting with pre-determined local employment structures. The identifying assumption is that variation in female labor-market instability affects maternal expectations by altering women's perceived economic prospects, without directly influencing children's socio-emotional outcomes except through these expectations. Given the aggregate nature of the instrument and the institutional context of limited social protection, this assumption is plausible but not directly testable.

Understanding how labor-market conditions shape maternal expectations requires accounting for both cultural norms and economic constraints. In much of Latin America, familism and norms of intergenerational reciprocity remain strong, sustaining expectations of mutual support between parents and children regardless of short-run economic conditions (Abad and Maurer, 2025). As a result, expectations may vary partly independently of women's labor-market opportunities. At the same time, the component of maternal

expectations that responds to economic conditions may be shaped by labor-market instability, as economic agents in Latin America, given their long exposure to economic volatility, are accustomed to adapting their behavior and expectations in response to recurrent macroeconomic and labor market shocks.

In contexts characterized by high female informality, limited access to contributory pensions, and a heavy burden of unpaid domestic and caregiving work borne by women, unstable employment trajectories may weaken perceived long-run economic security. When future income prospects are uncertain, expectations of support from children may increase as a form of informal insurance. In Peru, statistical discrimination and the unequal allocation of caregiving responsibilities are likely to constrain women's access to stable employment (Bosch et al., 2025); consistent with this, nearly 70% of employed women work in the informal sector, and women devote more than 20 hours per week to unpaid domestic and caregiving activities, almost three times the male average. These constraints limit women's access to formal old-age security and contributory pensions, arguably increasing reliance on private and intergenerational support mechanisms.

Consistent with this environment of heightened economic risk, maternal expectations about future labor-market outcomes become a key determinant of family decisions. The shift-share measure of female labor-market instability used in this paper captures this economically driven component of maternal expectations. Higher exposure to labor-market instability is expected to raise expectations of future support from children, while lower instability may reduce the perceived need for such support, operating alongside, rather than replacing, persistent cultural norms of familism.

Finally, also in equations (2.2) and (2.3), the vector of controls $\mathbf{X}_{it}$ includes a standard set of time-varying child and household characteristics. These include child demographics, household composition, and socioeconomic indicators, such as an indicator for households in the top 70th percentile of the wealth distribution and a measure of whether the child aspires to complete upper-secondary education. Standard errors are clustered at the department level to account for serial correlation and correlated shocks within local labor markets over time.

2.3 Data and Sample

To implement the strategy proposed in the previous Section, this study combines longitudinal data from the Young Lives project with labor market information from the Encuesta Nacional de Hogares (ENAHO). The primary data source is the Young Lives study, a longitudinal survey coordinated by the University of Oxford that follows two cohorts of children in four developing countries. The focus is on the younger cohort in Peru, born in 2001–2002, who were approximately 12 years old in Round 4 and 15 years old in Round 5. Young Lives adopts a pro-poor sampling strategy, oversampling households in disadvantaged areas. The survey is uniquely suited to this analysis, as it includes detailed, matched modules administered to both children in the selected cohort and their primary caregivers, enabling to trace the evolution of intergenerational dynamics over the course of adolescence.

Following the literature (Algan et al., 2022; Nicoletti et al., 2024), Exploratory Factor Analysis (EFA) is employed to construct latent measures of socio-emotional skills. This approach reduces multiple Likert-scale survey items into a parsimonious set of unobserved constructs by identifying common variance across conceptually related items. Item selection was informed by the literature on non-cognitive skill formation, which emphasizes the relevance of traits such as self-esteem, self-efficacy, and socio-emotional regulation (Cunha et al., 2010; Heckman, 2006). Factors were extracted using the iterated principal factor method,

with the number of retained factors determined by the Kaiser criterion (eigenvalues > 1). Each resulting index was standardized to a mean of zero and a unit standard deviation, where higher values indicate a greater manifestation of the latent trait.

Four distinct socio-emotional dimensions for adolescents are identified. These include self-efficacy, representing the perceived capacity to manage challenges and adapt to stress; self-esteem, reflecting overall self-worth and self-acceptance; peer relations, capturing the quality of social integration and relationships; and pride, denoting a sense of personal accomplishment and self-respect. In each case, a single dominant factor was retained with factor loadings exceeding 0.8, confirming the unidimensionality and strong internal consistency of these constructs. These indexes map closely to the task-effectiveness and social skill dimensions emphasized by Mitchell et al. (2025) and Hossain and Jukes (2025), who document their distinct developmental trajectories.

Also, three maternal latent factors are constructed using exploratory factor analysis: expectation of future filial support, agency and pride. The expectation of future filial support serves as the primary explanatory variable of interest, intended to measure the extent to which caregivers anticipate financial assistance from their child in adulthood. This construct reflects forward-looking beliefs about the intergenerational contract and acts as a proxy for expectations that may influence parental investment decisions and the household's emotional environment. The agency and pride indices are used in heterogeneity analyses to explore maternal-level transmission channels, capturing aspects of emotional resilience and perceived locus of control. For all maternal constructs, factor loadings generally exceeded 0.5.

Consistent with Mitchell et al. (2025), the analysis utilizes information from the primary caregiver identified in the household roster. So, the sample is refined to include only those cases where the mother is the primary respondent, a choice that accounts for the vast majority of caregivers in the Young Lives Peru sample and allows for a clearer interpretation of maternal expectations.

The empirical analysis includes a standard set of time-varying child and household controls commonly associated with children's socio-emotional development (See Tables A.8 and A.9 in Appendix) . These include an indicator for whether the household's wealth index lies above the 70th percentile and a dummy indicating whether the child expects to finish higher formal education. These controls help mitigate confounding related to human capital, and socioeconomic background.

To build the instrumental variable, this study draws on labor market data from the ENAHO, a nationally representative household survey conducted annually by the Instituto Nacional de Estadística e Informática (INEI). The ENAHO provides detailed information on individuals' employment status, occupation, industry, income, and demographic characteristics. Baseline sectoral employment shares of women are computed at the department level using the 2013 ENAHO wave, which coincides with Round 4 of Young Lives. The sample is restricted to women of working age (14–65) and excludes students and retirees to focus on active labor market participants. To reduce dimensionality and capture persistent structural differences in female employment, economic activities are grouped into three broad categories: (i) tradable goods, (ii) tradable services, and (iii) non-tradable services. These baseline shares are interacted with national-level sectoral employment volatility for women over the period 2012–2019, measured outside the Young Lives sample. The resulting shift-share measure captures differential exposure to aggregate female labor-market instability based on fixed local employment structures (Goldsmith-Pinkham et al., 2020) . This predicted instability is used to instrument changes in caregivers' expectations of future support from children.

The grouping of sectors into tradable and non-tradable activities reflects persistent features of Peru's

labor market (Bosch et al., 2025; Abad and Maurer, 2025). Women are disproportionately concentrated in non-tradable services, such as domestic work, health, education, and commerce, which are characterized by high informality, low wages, and limited access to contributory social protection. By contrast, tradable goods and tradable services tend to offer higher productivity and formality but remain less accessible to women, particularly outside urban areas. This tripartite classification allows the instrument to capture economically meaningful and socially relevant variation in women's labor-market instability across regions.

2.3.1 Descriptive Statistics

To provide an overview of the sample, this subsection presents descriptive statistics for the main variables of interest. Tables A.8 and A.9 report measures of central tendency (mean), dispersion (standard deviation), and distribution (minimum, median, 99th percentile, and maximum) for Rounds 4 and 5, respectively.

The child socio-emotional outcomes, constructed through factor analysis and standardized, include self-efficacy, self-esteem, peer relations, and pride. By construction, these indexes are centered around zero. However, their dispersion increases between rounds, indicating greater heterogeneity as children progress through adolescence. This widening of the distributions is illustrated in Appendix Figure A.1 with particularly pronounced changes for pride in Round 5, where the distribution becomes wider and mildly right-skewed.

Maternal variables display comparatively less variation over time. On average, agency and pride increase modestly between survey rounds, whereas a small decline is observed in expectations of future help from children. These patterns are illustrated in Appendix Figure A.2, which shows largely symmetric distributions with limited shifts in central tendency, consistent with the notion that these traits are relatively stable in adulthood (Almlund et al., 2011).

Several educational and well-being indicators were also examined. More than 80% of children reported post-secondary education as their ideal level in both rounds, indicating high and stable educational aspirations. Subjective well-being remained relatively constant, with mean values of 6.5 in Round 4 and 6.3 in Round 5 (on a 0–10 scale), and a modal value close to 6 in both periods.

At the caregiver level, educational expectations closely mirrored those of the children: approximately 70% reported post-secondary education as the ideal outcome, while around 20% selected secondary education. Caregivers' current subjective well-being averaged 5.6 in Round 4 and declined slightly to 5.5 in Round 5. Expectations regarding well-being for the future decreased from 7.1 to 6.8, suggesting a mild reduction in optimism over time.

Background characteristics of the sample were also documented. Children's average age increased from approximately 12 to 15 years across survey rounds, while the gender composition remained balanced, with around 50% identified as female. Roughly 70% of children resided in urban areas, and the average household size was five. Caregiver educational attainment was relatively low: nearly half had completed primary education or less, and only about 20% had education beyond the secondary level. Most caregivers were married. Between 40% and 50% of households fell within the top 30% of the wealth distribution, indicating moderate socioeconomic heterogeneity. Time-use patterns show that average travel time to school increased slightly, driven by growth in the upper tail of the distribution. Children spent roughly 30% of their day in school and about 10% studying, with limited participation in paid work. BMI-for-age z-scores averaged between 0.4 and 0.5 in both rounds, suggesting a generally healthy nutritional profile, albeit with substantial individual variation.

Finally, descriptive evidence on baseline female employment structures provides context for the instrumental-variable strategy used in the analysis. Table A.10 documents substantial heterogeneity across departments in the baseline (2013) distribution of female employment across tradable goods, tradable services, and non-tradable services. Figure A.3 and Figure A.4 show that sectors also differ markedly in the volatility of female employment growth over the 2012-2019 period, and that interacting these sector-level volatility measures with baseline employment shares generates meaningful variation in predicted female labor-market instability across departments. Importantly, this variation reflects the interaction between fixed local employment structures and aggregate sectoral dynamics, rather than static differences in local labor markets alone. These descriptive patterns help motivate the shift-share design by illustrating that the instrument captures differential exposure to national labor-market shocks, providing the basis for the identification strategy proposed in Section 2.2.

The descriptive patterns presented in this subsection provide a detailed portrait of the study sample and offer important context for interpreting the empirical findings. The combination of increasing heterogeneity in adolescents' socio-emotional outcomes and relatively stable maternal characteristics underscores the relevance of examining how forward-looking beliefs and household dynamics interact during this stage of the life course.

2.4 Results

Table 2.1: Maternal expectations and adolescents' socio-emotional outcomes

	OLS	FE	IV Pooled
Self efficacy	-0.111**	-0.072*	-0.551*
	(0.038)	(0.050)	(0.211)
Self-esteem	-0.116**	-0.071*	-0.474*
	(0.034)	(0.052)	(0.192)
Peer relations	-0.114**	-0.071	-0.505
	(0.036)	(0.053)	(0.210)
Pride	-0.091*	-0.076***	-0.408
	(0.031)	(0.050)	(0.193)
Math score	-0.016	0.008	-0.728**
	(0.011)	(0.025)	(0.244)

Notes: The dependent variables are standardized factor scores capturing self-efficacy, self-esteem, peer relations, pride, and standardized math scores. The key explanatory variable is a standardized index of maternal expectations of future emotional or financial support from the child, created using factor analysis. Column (1) reports pooled OLS estimates including survey round fixed effects. Column (2) reports estimates from a specification with child fixed effects, absorbing time-invariant child-level heterogeneity. Column (3) reports instrumental-variables (2SLS) estimates, where maternal expectations are instrumented using a leave-one-out, department-level shift-share measure of female labor-market uncertainty including survey round fixed effects. All specifications include controls. Standard errors are clustered at the department level. *,**,*** indicate statistical significance at the 10%, 5% and 1% level, respectively.

This paper investigates the extent to which maternal expectations regarding children's future caregiving influence adolescents' socio-emotional development. Table 2.1 presents estimates of a latent maternal factor,

capturing expectations about children's future support, on multiple dimensions of adolescents' (ages 12–15) socio-emotional development, including self-efficacy, self-esteem, peer relations, and pride. Results from three complementary specifications—pooled OLS, child fixed effects (FE), and instrumental variables (IV) are reported, which allow to assess the robustness of the estimated effects while accounting for unobserved heterogeneity and potential endogeneity in maternal expectations. This approach enables a direct comparison between cross-sectional associations, within-child estimates that absorb time-invariant heterogeneity, and causal estimates derived from exogenous variation in expectations, providing a comprehensive view of the relationship between maternal beliefs and adolescent socio-emotional outcomes.

Pooled OLS estimates indicate a negative association between maternal expectations and adolescents' socio-emotional outcomes, including self-efficacy, self-esteem, peer relations, and pride. These correlations are statistically significant, but may reflect both causal effects and confounding from unobserved child or household characteristics.

Introducing child fixed effects attenuates the magnitude of the coefficients but preserves a clear negative pattern for several outcomes. In particular, increases in maternal expectations within the same child over time are associated with statistically significant declines in self-efficacy, self-esteem, and pride. These results indicate that the relationship between maternal expectations and these socio-emotional dimensions is not driven solely by time-invariant heterogeneity across families or children. For peer relations, the coefficient remains negative but becomes imprecisely estimated once child fixed effects are introduced, suggesting that cross-sectional associations may partly reflect persistent differences in social environments rather than within-child changes in expectations. The estimated coefficients are around –0.10, and because both maternal expectations and the socio-emotional outcomes are standardized, a one standard deviation increase in maternal expectations corresponds to a 0.10 standard deviation decline in adolescents' self-efficacy, self-esteem, and pride. Although modest in magnitude, these effects are meaningful, especially considering the cumulative role of socio-emotional development during adolescence.

The fixed-effects estimates document robust associations between changes in maternal expectations and changes in children's socio-emotional outcomes, consistent with the idea that rising expectations may act as a source of anticipatory stress or emotional burden for children. Looking ahead to future responsibilities, such as financial support, caregiving, or co-residence, may generate anxiety, reduce perceived autonomy, or increase psychological pressure, particularly in contexts of economic insecurity and limited institutional alternatives. Through this channel, higher expectations translate into poorer socio-emotional outcomes as children internalize obligations that feel unavoidable or overwhelming. The dimensions most affected are those closely linked to autonomy and self-worth. Declines in self-efficacy and self-esteem align with an interpretation in which anticipated responsibility constrains adolescents' sense of control over their own future. Internalizing prospective financial or caregiving roles may lead children to perceive their life course as partially predetermined, reducing perceived agency at a critical developmental stage. Evidence for peer relations and pride is more nuanced. This pattern suggests that social and identity-related dimensions may be shaped by a broader set of stable family and community factors, with parental expectations playing a less dominant causal role. Pride, in particular, may capture ambivalent responses: children may simultaneously experience burden and moral affirmation from anticipated family roles, yielding imprecise net effects.

Column (3) reports the IV estimates, with first-stage results presented in Table 2.2, which exploit exogenous variation in maternal expectations induced by differential exposure to female labor-market instability. The IV coefficients are larger in magnitude than their OLS and child fixed-effects counterparts, consistent

with attenuation bias in the non-instrumented specifications. This attenuation likely arises through two channels. First, if measurement error in the latent expectations factor biases estimates toward zero, by instrumenting expectations with an external source of variation that is orthogonal to this measurement error, the IV approach recovers larger estimates of the underlying causal effect. Second, time-varying unobserved influences, such as changes in maternal health, idiosyncratic household income shocks, or shifts in intra-household caregiving responsibilities, may jointly affect expectations and adolescents' socio-emotional outcomes, biasing non-instrumented estimates. These factors, however, are unlikely to be systematically correlated with aggregate, sector-level female labor-market instability, without challenging the plausibility of the exclusion restriction. The IV estimated coefficients for self-efficacy and self-esteem are negative and statistically significant, indicating that higher maternal expectations of future support causally reduce these dimensions of adolescents' socio-emotional development. In contrast, the IV estimates for peer relations and pride remain negative but statistically insignificant. For math test scores, the IV estimate is also negative and statistically significant, in contrast to the OLS and fixed-effects coefficients, which are close to zero and imprecisely estimated. This divergence suggests that the effects of maternal expectations may extend beyond socio-emotional outcomes into the cognitive domain. More broadly, the IV results indicate that non-instrumented specifications may mask impacts on cognitive performance due to attenuation bias, pointing to wider developmental consequences of anticipated responsibility, potentially operating through stress, time allocation, or reduced cognitive engagement.

Table 2.2: First stage: female labor-market uncertainty on maternal expectations

	Expectations
Uncertainty IV	0.080***
	(0.018)
F-statistic	19.780
Obs	3,198

Notes: The dependent variable is a standardized index measuring maternal expectations of future filial support. The explanatory variable is a leave-one-out, standardized measure of department-level exposure to female labor-market instability: a shift-share index combining female employment shares by sector in 2013 with sector-level employment volatility over the period 2012–2019. Sectoral volatility is measured as the standard deviation of annual log employment growth and is computed using a leave-one-out procedure that excludes the department's own employment when constructing sector-level variation. The index is standardized across departments. The sample is restricted to children whose main caregiver is female. Standard errors are clustered at the department level. *, **, *** indicate statistical significance at the 10%, 5% and 1% level, respectively.

Table 2.2 reports the first-stage estimates of the instrumental-variable strategy, where maternal expectations of future support are instrumented using a shift-share measure of female labor-market instability. The coefficient on the instrument is negative and statistically significant at the 1% level, indicating that higher exposure to female labor-market instability is associated with higher maternal expectations of future support from children. The strength of the instrument is supported by a robust first-stage F-statistic of 25.42, well above conventional Stock–Yogo critical values, indicating that weak-instrument concerns are unlikely to compromise identification. The Sanderson–Windmeijer multivariate F-test yields the same value, confirming the relevance of the excluded instrument conditional on the included controls. These results are consistent with the identifying assumption that exogenous variation in local female labor-market conditions, driven by national sectoral volatility and fixed employment structures, affects maternal expectations of future support. This finding is consistent with the interpretation that labor-market volatility weakens perceived long-run economic security, especially in contexts where women face high informality and limited access

to contributory pensions. Even when employment opportunities expand in aggregate, instability in sectoral employment may reinforce reliance on family-based insurance mechanisms, increasing the salience of future intergenerational support. These expectations plausibly operate through both material and normative mechanisms. On the material side, unstable labor-market trajectories may heighten uncertainty about future income and old-age security, making anticipated support from children a central coping strategy. On the normative side, labor-market instability may shape mothers' perceptions of their role within the household and their future dependence on family ties. In settings characterized by strong norms of familism and reciprocity, such expectations need not disappear with labor-market participation, but may respond to changes in the perceived reliability of market-based income.

Taken together, these findings highlight maternal expectations as a key intermediary between structural economic conditions and child development. Expectations are neither fixed cultural traits nor mere reflections of current income, but adaptive responses to labor-market instability and institutional constraints. Importantly, their consequences for children emerge well before caregiving responsibilities are realized.

2.4.1 Robustness of maternal expectations measurement

To assess the robustness of the results, it is examined an alternative operationalization of maternal expectations that uses different sets of survey items to ensure that the findings are not driven by the specific construction of the latent expectations factor.

Table 2.3 disaggregates maternal expectations into their individual components and reports pooled OLS and child fixed-effects estimates. Expectations related to future financial support and old-age care exhibit the strongest and most consistent negative associations with adolescents' self-efficacy and self-esteem. These associations remain negative and statistically significant for several items once child fixed effects are included, albeit attenuated in magnitude, indicating that within-child increases in anticipated economic responsibility are associated with declines in socio-emotional outcomes.

Expectations centered on future caregiving and financial provision for the mother appear more salient than expectations related to emotional support alone. Items capturing emotional support show weaker and less precisely estimated associations once time-invariant heterogeneity is absorbed, suggesting that the socio-emotional burden is more strongly linked to anticipated material and caregiving obligations than to affective reciprocity per se.

For math performance, several expectation items, particularly those related to financial assistance, are significantly associated with test scores in pooled OLS specifications, while these relationships are generally attenuated and less consistently estimated in child fixed-effects models. This pattern suggests that anticipated responsibilities may also be related to cognitive outcomes, although the evidence is less robust and more sensitive to specification compared to socio-emotional dimensions.

2.4.2 Heterogenous effects by maternal socio-emotional traits

Also, it is investigated whether the impact of maternal expectations on adolescents' socio-emotional outcomes varies according to mothers' own socio-emotional characteristics. In particular, maternal agency and pride, which reflect mothers' perceived autonomy, control over life circumstances, and sense of self-worth. By interacting maternal expectations with these latent psychosocial traits, it can assessed whether the strength or direction of the effects differs for mothers with higher versus lower socio-emotional resources.

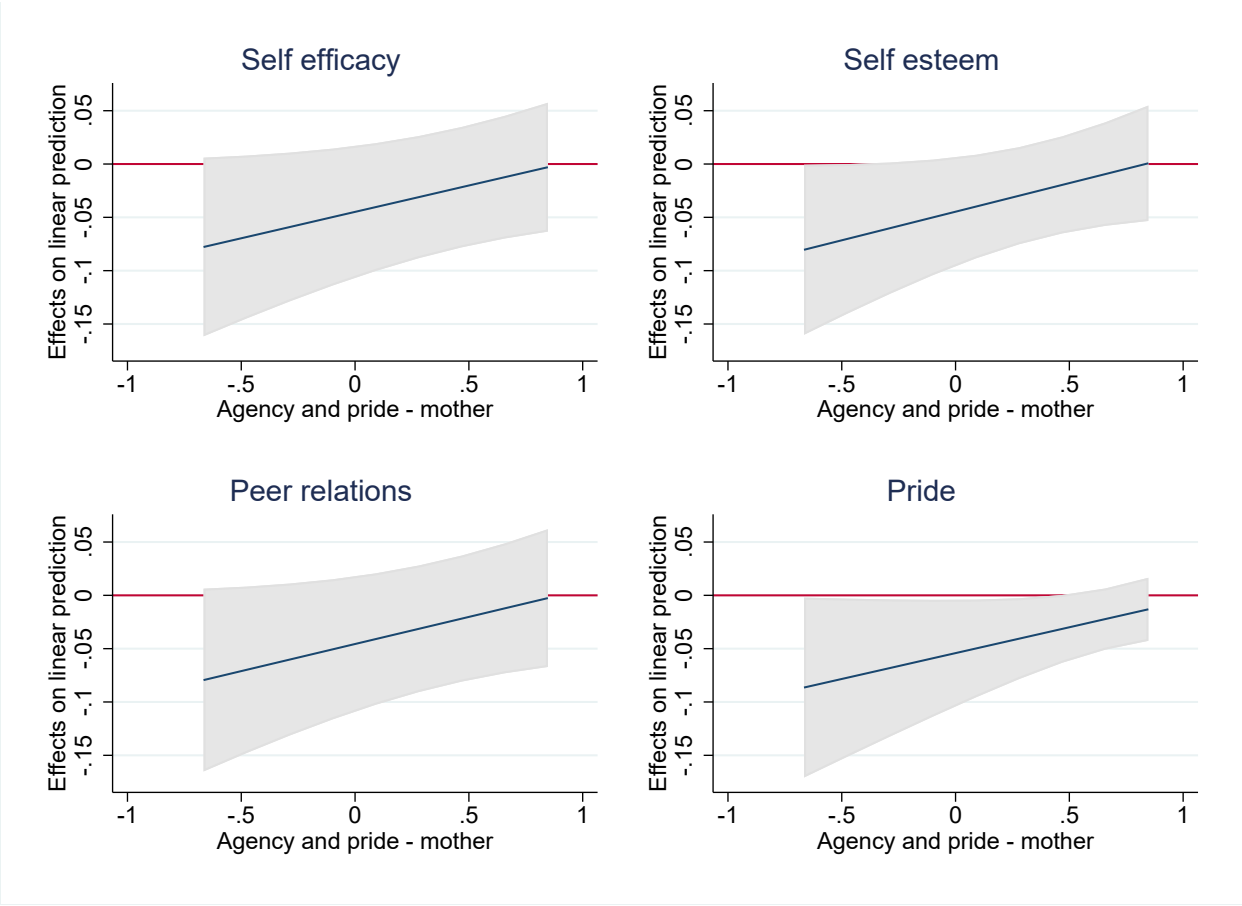
Table 2.3: Maternal expectations and adolescents' outcomes: individual expectation items

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
	Self-efficacy		Self-esteem		Peer relations		Pride		Ln math score	
Variables	OLS	FE	OLS	FE	OLS	FE	OLS	FE	OLS	FE
Continues living close	-0.017	-0.023	-0.020	-0.038	-0.019	-0.030	-0.011	-0.044	0.009	0.025*
	(0.018)	(0.042)	(0.017)	(0.040)	(0.015)	(0.040)	(0.017)	(0.044)	(0.007)	(0.016)
Financial assistance to siblings	-0.030**	-0.015	-0.034**	-0.013	-0.032*	-0.012	-0.033**	-0.024*	-0.009	0.027***
	(0.013)	(0.019)	(0.014)	(0.014)	(0.014)	(0.014)	(0.012)	(0.016)	(0.006)	(0.008)
Helps you with housework	-0.054*	-0.038*	-0.055*	-0.037	-0.054*	-0.036	-0.049**	-0.053*	-0.008	0.035**
	(0.024)	(0.029)	(0.020)	(0.036)	(0.022)	(0.040)	(0.017)	(0.036)	(0.009)	(0.016)
Financial assistance to you	-0.072*	-0.029	-0.082**	-0.040	-0.079**	-0.040	-0.070**	-0.040	-0.012	0.027*
	(0.028)	(0.040)	(0.024)	(0.042)	(0.023)	(0.043)	(0.026)	(0.045)	(0.010)	(0.019)
Helps you care for younger siblings	-0.023	-0.026	-0.027*	-0.025**	-0.024*	-0.024	-0.019	-0.021*	-0.014**	0.006
	(0.012)	(0.024)	(0.011)	(0.013)	(0.012)	(0.017)	(0.011)	(0.012)	(0.005)	(0.011)
Cares for you when you are old	-0.085**	-0.042**	-0.079**	-0.030	-0.083**	-0.034	-0.056*	-0.032	0.005	0.002
	(0.023)	(0.033)	(0.022)	(0.041)	(0.023)	(0.038)	(0.022)	(0.037)	(0.008)	(0.020)
Provides emotional support to you	-0.081**	-0.050*	-0.079**	-0.054	-0.083**	-0.055	-0.051*	-0.024	0.023***	-0.002
	(0.026)	(0.031)	(0.023)	(0.039)	(0.023)	(0.038)	(0.023)	(0.047)	(0.006)	(0.025)

This table reports estimates of the association between individual components of maternal expectations of future support and child outcomes. Each row corresponds to a specific expectation item used to construct the maternal expectations factor, capturing different dimensions of expected future support from the child. The dependent variables are standardized factor scores capturing self-efficacy, self-esteem, peer relations, pride, and the logarithm of standardized math scores. Columns labeled OLS report pooled ordinary least squares estimates including survey round fixed effects. Columns labeled FE report estimates from specifications with child fixed effects, absorbing time-invariant child-level heterogeneity. All specifications include controls for indicators for house hold being above the 70th percentile of the wealth index, child aspiring to complete upper-secondary education. The sample is restricted to children whose main caregiver is female. Standard errors are clustered at the department level. *,**,*** indicate statistical significance at the 10%, 5% and 1% level, respectively.

This analysis allows to explore potential moderation channels, whereby the internal resources of the caregiver shape the intergenerational transmission of anticipatory stress and expectations.

Figure 2.1: Expectations on help (mother) on SE outcomes by Agency and pride (mother)



This figure plots heterogeneous marginal effects of maternal expectations on adolescents' socio-emotional outcomes as a function of maternal agency and pride. For each outcome, the underlying specification is estimated by OLS with child fixed effects: $Y_{it} = \beta_1 \mathrm{E}_{it} + \beta_2 \mathrm{AP}_{it} + \beta_3(\mathrm{E}_{it} \times \mathrm{AP}_{it}) + \mathbf{X}'_{it}\gamma + \alpha_i + \varepsilon_{it}$, where Y_{it} is one of the standardized socio-emotional factor outcomes (self-efficacy, self-esteem, peer relations, pride), E_{it} is the maternal expectations factor index, AP_{it} is the maternal agency-and-pride factor index, α_i are child fixed effects, and $\mathbf{X}_{it}$ includes indicators for house hold being above the 70th percentile of the wealth index, child aspiring to complete upper-secondary education, and child attending a public school. The sample is restricted to children whose main caregiver is female. For each panel, the solid line reports $\partial Y_{it}/\partial \mathrm{E}_{it}$ evaluated at values of AP_{it} spanning the 10th to the 90th percentile of its empirical distribution, using nine equally spaced points between these percentiles. Shaded areas show 95% confidence intervals; the horizontal line at zero indicates no effect. Standard errors are clustered at the department level.

Figure 2.1 presents the heterogeneous effects of maternal expectations on child socio-emotional outcomes, conditioned on maternal agency and pride. Across the outcomes examined, the point estimates exhibit a consistent attenuating pattern: the magnitude of the negative association between expectations and child outcomes diminishes as maternal agency increases. For self-efficacy and peer relations, while the point estimates follow this trend, the confidence intervals remain wide and encompass zero across the entire distribution of the moderator, precluding a definitive claim of statistical significance.

In contrast, the results for self-esteem and pride reveal more robust evidence of moderation. For these dimensions, the negative impact of maternal expectations is primarily concentrated among mothers with lower levels of agency, where the estimates are precisely measured and statistically significant. As agency levels rise, these effects are mitigated, eventually becoming indistinguishable from zero at the higher end

of the distribution. Taken together, these findings suggest that maternal agency may serve as a protective factor, moderating the intensity of the relationship between expectations and socio-emotional development. While the evidence for self-esteem and pride is statistically rigorous, the results for self-efficacy and peer relations remain suggestive, likely reflecting a lack of statistical power to detect more subtle interactions.

This heterogeneity analysis provides additional insight into mechanisms. Negative effects of maternal expectations are most pronounced among mothers with lower levels of agency and pride, and attenuate as maternal agency increases. This pattern suggests that expectations are not uniformly harmful, but interact with the emotional and psychological resources of the caregiver. When maternal agency is low, expectations of future support may be conveyed in ways that intensify pressure or emotional dependence. In contrast, higher agency may buffer children from the adverse effects of expectations, either by framing future support as voluntary or by reducing the emotional burden associated with it.

2.5 Discussion and conclusion

This paper makes a novel contribution to the literature on household economics in developing countries by identifying a previously underexplored channel of intergenerational transmission: the shadow of future filial obligations. Traditional models of household investment often focus on static resource constraints, emphasizing current material endowments such as income, wealth, or observable assets as the primary determinants of child outcomes (Becker, 1992). More recent theories highlight the role of parental preferences, risk exposure, and strategic behavior in shaping investment decisions (Doepke and Zilibotti, 2017), suggesting that forward-looking beliefs about family obligations and economic environments influence both the resources parents allocate and the psychological context in which children develop. Building on this perspective, it is examined how maternal expectations of future intergenerational support, acting as a latent form of social insurance, shape adolescents' socio-emotional and cognitive trajectories. Using unique longitudinal data from the Young Lives study in Peru, a latent factor is constructed capturing maternal expectations and exploit exogenous variation induced by sector-level female labor-market instability to isolate causal effects. This approach allows to treat expectations not as fixed cultural traits, but as endogenous cognitive responses to structural economic environments.

The findings reveal two key results. First, heightened exposure to female labor-market instability significantly raises maternal expectations of future support, suggesting that in contexts of high informality and limited pension access, households adapt to economic volatility by reinforcing family-based informal insurance. Second, these expectations have adverse consequences for adolescent development: higher maternal reliance on future support reduces self-efficacy and self-esteem, and negatively affects cognitive outcomes such as math performance. These effects reflect a psychological externality of incomplete insurance markets, whereby reliance on future child support creates developmental burdens that constrain adolescents' perceived agency and sense of control over their life course.

Heterogeneity analysis further shows that the impact of expectations depends on maternal psychosocial traits. Negative effects are concentrated among mothers with lower levels of agency and pride, and diminish as maternal agency increases, suggesting that caregiver emotional and psychological resources can buffer or amplify intergenerational transmission of stress. Overall, the results highlight a causal channel linking labor-market vulnerability, maternal expectations, and adolescent development, with broader implications for policy. Strengthening women's economic security and expanding formal social insurance may reduce

reliance on family-based obligations, thereby supporting both adult well-being and the human capital of the next generation.

From a policy perspective, the findings suggest that improving women's economic security generates benefits that extend beyond immediate income or employment. Policies that reduce labor-market volatility, expand access to contributory pensions, and strengthen public provision of care can lower households' reliance on anticipated support from children, thereby easing the emotional and developmental burden placed on adolescents. Complementary investments that enhance women's agency, through education, stable employment, or targeted social empowerment programs, may further mitigate the transmission of economic vulnerability across generations.

Behavioral interventions can also play a role in decoupling child human capital investment from traditional filial insurance norms. Programs combining financial literacy with psychosocial empowerment may help mothers reduce the perceived necessity of future intergenerational transfers. Similarly, school-based initiatives that foster youth autonomy and future-oriented agency can signal that individual skill acquisition and professional success provide a sustainable path to household welfare, rather than relying on anticipated family support. By creating an environment where adolescents feel permitted to prioritize their own development, policymakers can reduce the psychological externalities of economic risk and support healthier intergenerational trajectories.

Overall, these findings underscore that formal social protection and economic stability for women serve a dual purpose: securing mothers' financial futures while simultaneously improving adolescents' socio-emotional and cognitive development. Recognizing maternal expectations as a distinct developmental channel highlights the importance of policies that combine structural economic support with interventions that strengthen maternal agency. In developing economies with incomplete insurance markets, such strategies represent foundational investments in the human capital and well-being of the next generation.

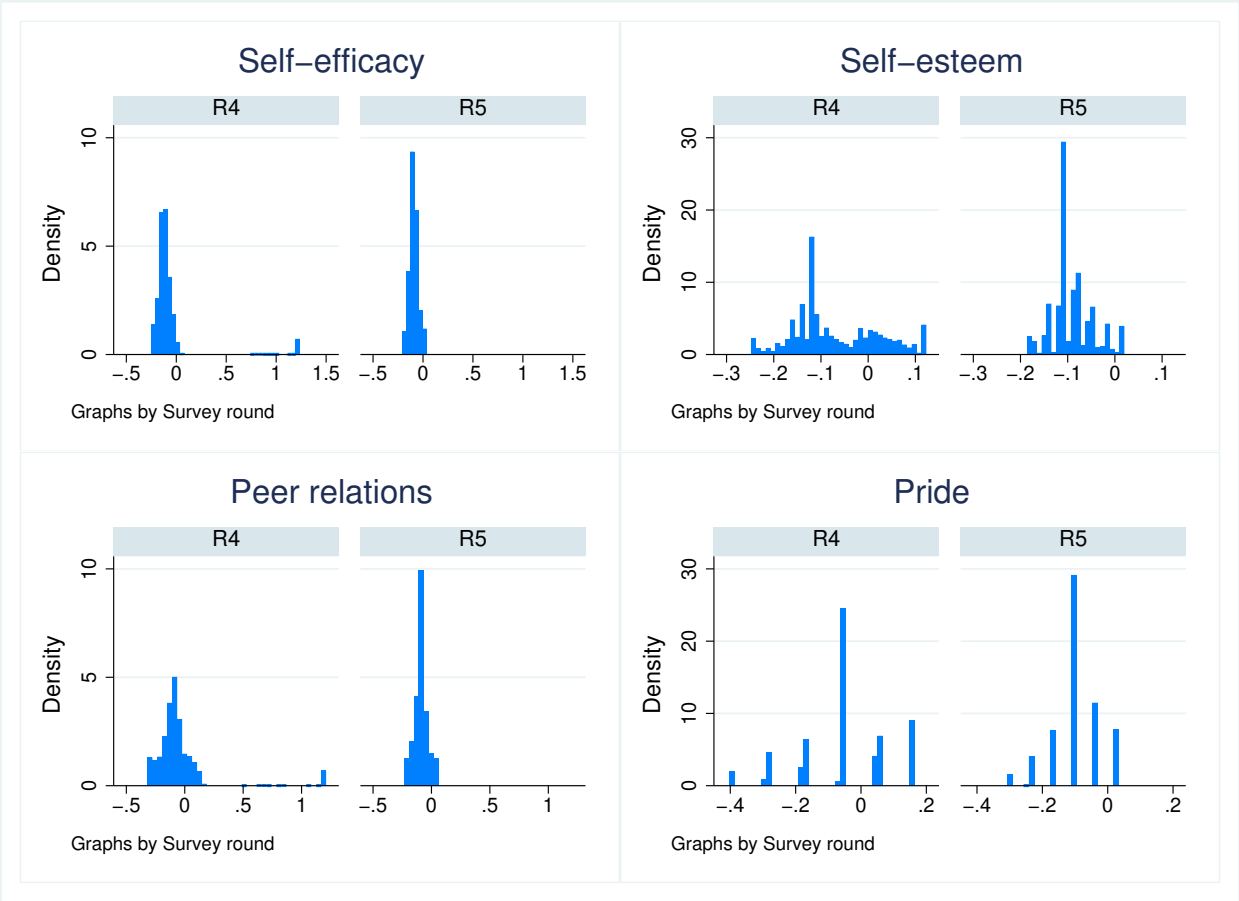
A key limitation of the analysis is that potential altruistic benefits or gains in subjective well-being arising from intergenerational interactions later in the life cycle are not accounted for. Existing evidence documents strong positive well-being spillovers between parents and adult children, highlighting substantial altruistic returns to family ties in adulthood (Schwarze and Winkelmann, 2011). The focus, however, is on adolescence—a developmental stage in which anticipated future caregiving obligations are plausibly experienced as a psychological burden rather than a source of well-being. Consequently, the long-term positive effects of fulfilling filial responsibilities, including enhanced family cohesion, moral satisfaction, or reciprocal support in adulthood, are not captured in the estimates. Moreover, it is possible that some adolescents may derive pride or a sense of purpose from anticipated family roles, but such effects are likely heterogeneous and secondary to the immediate psychological strain identified in the results. Thus, while the study identifies causal negative impacts of maternal expectations during adolescence, it does not imply that intergenerational transfers or caregiving obligations are inherently detrimental across the life course.

Future research could extend the analysis by exploring the long-term interplay between maternal expectations, adolescent development, and adult outcomes. In particular, examining whether the negative psychological burden observed in adolescence is offset by altruistic or well-being gains later in life would provide a more complete picture of intergenerational dynamics. To achieve this, longitudinal datasets that track individuals from childhood through adulthood are essential, ideally combining detailed measures of parental expectations, adolescents' socio-emotional development, cognitive skills, and eventual adult outcomes, including labor-market performance, caregiving behaviors, and subjective well-being. Rich con-

textual data on household economic conditions, social protection access, and cultural norms would further strengthen causal identification and allow for heterogeneous effects by family, community, or institutional context. Experimental or quasi-experimental interventions, such as randomized programs enhancing maternal economic security or psychosocial support, could complement observational studies by providing more robust evidence of causal mechanisms and policy relevance.

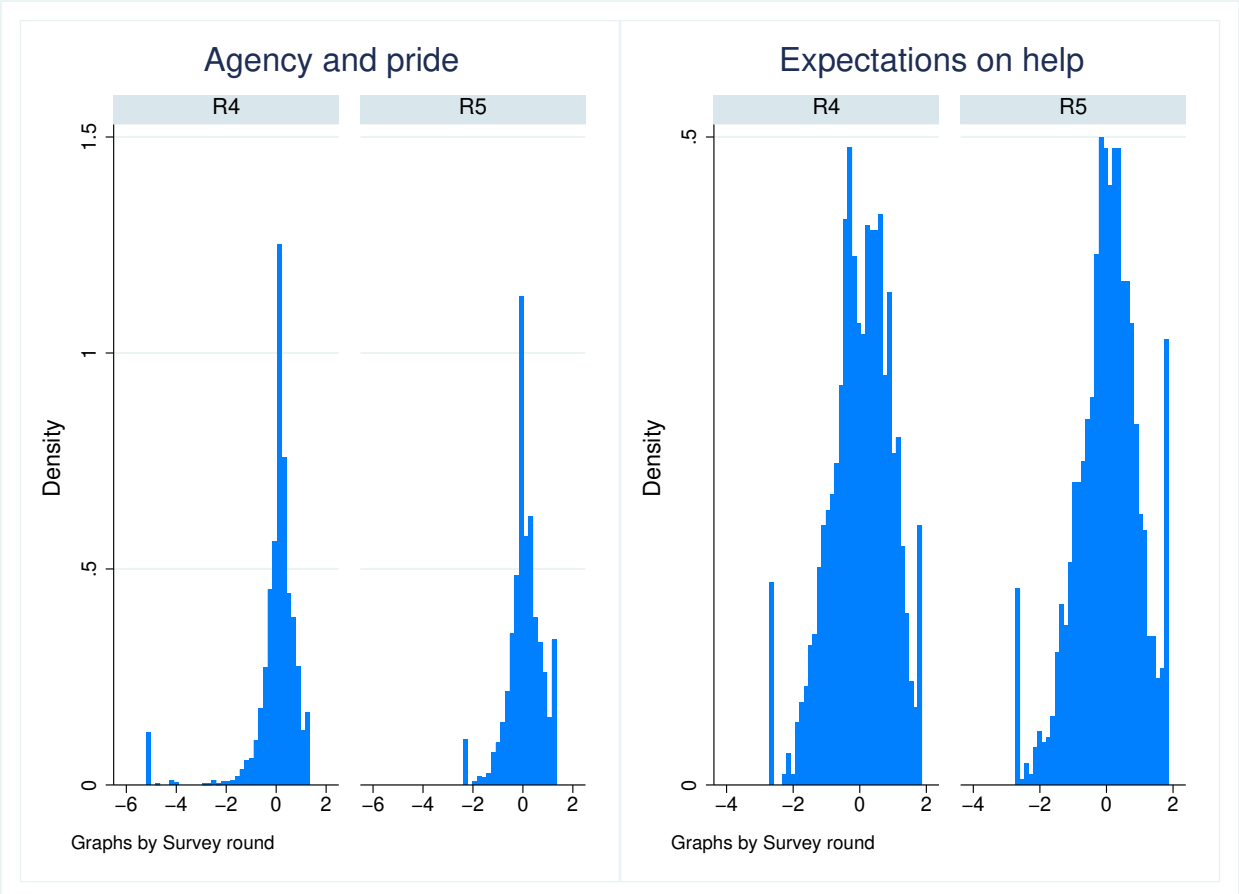
2.6 Appendix

Figure A.1: Distribution of children's socio-emotional skills



Notes: Kernel density distributions of children's socio-emotional skill indices in Rounds 4 and 5. Each panel shows the distribution of one latent factor constructed via exploratory factor analysis: self-efficacy, self-esteem, peer relations, and pride. All indices are standardized scores. Source: Young Lives - Rounds 4 and 5 (20013-2016). Sample: younger cohort

Figure A.2: Distribution of mother's attitudinal variables



Notes: Kernel density distributions of mother's socio-emotional skill and expecations on help indices in Rounds 4 and 5. Each panel shows the distribution of one latent factor constructed via exploratory factor analysis. All indices are standardized scores. Source: Young Lives - Rounds 4 and 5 (20013-2016). Sample: younger cohort.

Table A.1: Factor Analysis - Self efficacy

	Round 4		Round 5	
Variables	Factor 1	Uniqueness	Factor 1	Uniqueness
I can always manage to solve difficult problems if I try hard enough	0.813	0.153	0.995	0.002
If someone opposes me, I can find the means and ways to get what I want	0.796	0.175	0.994	0.005
It is easy for me to stick to my aims and accomplish my goals	0.823	0.230	0.995	0.003
I am confident that I could deal efficiently with unexpected events	0.798	0.135	0.924	0.140
Thanks to my resourcefulness, I know how to handle unforeseen situations	0.794	0.240	0.996	0.002
I can solve most problems if I invest the necessary effort	0.777	0.299	0.931	0.107
I can be calm when facing difficulties since I can rely on my coping ability	0.837	0.193	0.959	0.046
When I am confronted with a problem, I can usually find several solutions	0.738	0.347	0.995	0.003
If I am in trouble, I can usually think of a solution	0.788	0.132	0.985	0.004
I can usually handle whatever comes my way	0.804	0.123	0.947	0.049
Eigenvalue	6.357		9.457	

Notes: Exploratory factor analysis items in Rounds 4 and 5. The table reports factor loadings and uniqueness values for the first factor extracted using the iterated principal factor method. Following the Kaiser criterion, only factors with eigenvalues greater than 1 were retained. Source: Young Lives - Rounds 4 and 5 (20013-2016). Sample: younger cohort, children were 12 years old in R4 and 15 years old in R5. N is 1825 in R4 and 1728 in R5.

Table A.2: Factor Analysis - Self esteem

	Round 4		Round 5	
Variables	Factor 1	Uniqueness	Factor 1	Uniqueness
I do lots of important things	0.732	0.313	0.996	0.002
In general, I like being the way I am	0.934	0.075	0.995	0.002
Overall, I have a lot to be proud of	0.790	0.240	0.982	0.004
I can do things as well as most people	0.865	0.116	0.995	0.003
Other people think I am a good person	0.617	0.468	0.971	0.050
A lot of things about me are good	0.817	0.240	0.983	0.003
I'm as good as most other people	0.619	0.499	0.995	0.003
When I do something, I do it well	0.665	0.441	0.972	0.003
Eigenvalue	4.655		7.781	

Notes: Exploratory factor analysis items in Rounds 4 and 5. The table reports factor loadings and uniqueness values for the first factor extracted using the iterated principal factor method. Following the Kaiser criterion, only factors with eigenvalues greater than 1 were retained. Source: Young Lives - Rounds 4 and 5 (20013-2016). Sample: younger cohort, children were 12 years old in R4 and 15 years old in R5. N is 1825 in R4 and 1728 in R5.

Table A.3: Factor Analysis - Peer relations

	Round 4		Round 5	
Variables	Factor 1	Uniqueness	Factor 1	Uniqueness
I have lots of friends	0.749	0.294	0.999	0.002
I make friends easily	0.670	0.457	0.997	0.005
Other kids want me to be their friend	0.639	0.350	0.950	0.096
I have more friends than most other kids	0.741	0.323	0.998	0.003
I get along with other kids easily	0.883	0.139	0.998	0.003
I am easy to like	0.681	0.361	0.999	0.002
I am popular with kids of my own age	0.663	0.422	0.951	0.094
Most other kids like me	0.676	0.283	0.998	0.003
Eigenvalue	4.107		7.784	

Notes: Exploratory factor analysis items in Rounds 4 and 5. The table reports factor loadings and uniqueness values for the first factor extracted using the iterated principal factor method. Following the Kaiser criterion, only factors with eigenvalues greater than 1 were retained. Source: Young Lives - Rounds 4 and 5 (20013-2016). Sample: younger cohort, children were 12 years old in R4 and 15 years old in R5. N is 1825 in R4 and 1728 in R5.

Table A.4: Factor Analysis - Pride

	Round 4		Round 5	
Variables	Factor 1	Uniqueness	Factor 1	Uniqueness
I am proud of my clothes	0.917	0.159	0.958	0.081
I am proud of my shoes or of having shoes	0.917	0.159	0.958	0.081
Eigenvalue	1.682		1.837	

Notes: Exploratory factor analysis items in Rounds 4 and 5. The table reports factor loadings and uniqueness values for the first factor extracted using the iterated principal factor method. Following the Kaiser criterion, only factors with eigenvalues greater than 1 were retained. Source: Young Lives - Rounds 4 and 5 (20013-2016). Sample: younger cohort, children were 12 years old in R4 and 15 years old in R5. N is 1825 in R4 and 1728 in R5.

Table A.5: Factor Analysis - Agency and pride (mothers)

	Round 4		Round 5	
Variables	Factor 1	Uniqueness	Factor 1	Uniqueness
If I try hard I can improve my situation in life	0.704	0.437	0.647	0.524
I like to make plans for my future	0.729	0.413	0.657	0.512
I am proud of my clothes	0.648	0.534	0.645	0.540
I feel proud of the job done by the HH head	0.606	0.578	0.755	0.348
The job I do makes me feel proud	0.776	0.331	0.806	0.289
I feel proud of my children	0.724	0.418	0.720	0.435
I can do little to help my child do well in school, no matter how hard I try	0.496	0.701	0.408	0.775
Eigenvalue	3.188		3.172	

Notes: Exploratory factor analysis items in Rounds 4 and 5. The table reports factor loadings and uniqueness values for the first factor extracted using the iterated principal factor method. Following the Kaiser criterion, only factors with eigenvalues greater than 1 were retained. Source: Young Lives - Rounds 4 and 5 (20013-2016). Sample: female main caregivers of younger cohort. N is 1844 in R4 and 1739 in R5.

Table A.6: Factor Analysis - Expectations on help (mothers)

	Round 4		Round 5	
Variables	Factor 1	Uniqueness	Factor 1	Uniqueness
To which extent do you expect the following kinds of help when s/he is grown-up?				
S/he continues living close to you	0.515	0.624	0.452	0.665
S/he provides financial assistance to his/her younger siblings	0.644	0.214	0.647	0.194
S/he helps you with housework	0.605	0.479	0.609	0.423
S/he provides financial assistance to you	0.611	0.473	0.644	0.400
S/he helps you care for his/her younger siblings	0.611	0.244	0.628	0.203
S/he cares for you when you are old	0.671	0.337	0.646	0.357
S/he provides emotional support to you	0.598	0.454	0.537	0.488
Eigenvalue	2.601		2.507	

Notes: Exploratory factor analysis items in Rounds 4 and 5. The table reports factor loadings and uniqueness values for the first factor extracted using the iterated principal factor method. Following the Kaiser criterion, only factors with eigenvalues greater than 1 were retained. Source: Young Lives - Rounds 4 and 5 (20013-2016). Sample: female main caregivers of younger cohort. N is 1844 in R4 and 1739 in R5.

Table A.7: Main caregiver's relationship to the child

Relationship to the child	Male	Female	Total
Father/mother	3.1	89.3	92.4
Mother's or father's partner	0.0	0.5	0.6
Legal tutor	0.1	0.1	4.4
Grandparents	0.2	4.3	0.7
Siblings	0.2	0.5	1.6
Others	0.3	1.4	1.7
Total	3.8	96.2	100.0

Notes: Source: Young Lives - Rounds 4 and 5 (20013-2016).
Sample: main caregivers of younger cohort. N is 1893 in R4 and 1831 in R5.

Table A.8: Descriptive statistics – Round 4

Variable	N	Mean	St dev.	Min.	Median	99th p.	Max.
Self-efficacy -child	1903	-0.1	0.2	-0.3	-0.1	1.2	1.2
Self-esteem - child	1903	-0.1	0.1	-0.2	-0.1	0.1	0.1
Peer relations - child	1903	-0.1	0.2	-0.3	-0.1	1.2	1.2
Pride - child	1903	-0.1	0.1	-0.4	-0.1	0.2	0.2
Post-sec education ideal level to finish -child	1903	0.8	0.4	0.0	1.0	1.0	1.0
Subjective well-being - child	1875	6.5	1.9	1.0	6.0	9.0	9.0
Agency and pride - mothers	1903	0.0	1.0	-5.2	0.1	1.2	1.2
Expectations on help - mother	1903	0.0	0.9	-2.7	0.1	1.7	1.7
Poor health - mother	1903	0.0	1.0	-1.0	-0.3	2.9	2.9
Sec. educ is ideal level to finish - mother	1903	0.2	0.4	0.0	0.0	1.0	1.0
Post-sec. educ is ideal level to finish - mother	1903	0.7	0.4	0.0	1.0	1.0	1.0
Subjective well-being (current) - mother	1893	5.6	1.9	0.0	6.0	9.0	9.0
Subjective well-being (in 4 years) - mother	1889	7.1	1.9	0.0	8.0	9.0	10.0
Poor health - mother	1893	39.0	8.4	18.0	38.0	64.0	79.0
Age mother	1902	0.7	0.4	0.0	1.0	1.0	1.0
Urban	1828	5.2	1.8	2.0	5.0	11.0	18.0
Household size	1869	0.1	0.3	0.0	0.0	1.0	1.0
Max level educ caregiver=none	1869	0.4	0.5	0.0	0.0	1.0	1.0
Max level educ caregiver=primary	1869	0.4	0.5	0.0	0.0	1.0	1.0
Max level educ caregiver=secondary	1869	0.2	0.4	0.0	0.0	1.0	1.0
Max level educ caregiver=more than secondary	1893	0.8	0.4	0.0	1.0	1.0	1.0
Mother is married	1903	0.4	0.5	0.0	0.0	1.0	1.0
HH wealth index over 70th percentile	1879	11.9	0.3	11.0	12.0	13.0	14.0

Notes: Source: Young Lives - Rounds 4 and 5 (20013-2016). Sample: younger cohort.

Table A.9: Descriptive statistics – Round 5

Variable	N	Mean	St dev.	Min.	Median	99th p.	Max.
Self-efficacy -child	1860	-0.1	0.0	-0.2	-0.1	0.0	0.0
Self-esteem - child	1860	-0.1	0.0	-0.2	-0.1	0.0	0.0
Peer relations - child	1860	-0.1	0.1	-0.2	-0.1	0.0	0.0
Pride - child	1860	-0.1	0.1	-0.3	-0.1	0.0	0.0
Post-sec education ideal level to finish -child	1860	0.8	0.4	0.0	1.0	1.0	1.0
Subjective well-being - child	1829	6.3	1.5	1.0	6.0	9.0	9.0
Agency and pride - mothers	1860	0.1	0.7	-2.3	0.0	1.3	1.3
Expectations on help - mother	1860	0.0	0.9	-2.6	0.1	1.9	1.9
Poor health - mother	1860	0.0	1.0	-1.0	-0.3	2.7	2.7
Sec. educ is ideal level to finish - mother	1860	0.2	0.4	0.0	0.0	1.0	1.0
Post-sec. educ is ideal level to finish - mother	1860	0.7	0.4	0.0	1.0	1.0	1.0
Subjective well-being (current) - mother	1831	5.5	1.8	0.0	6.0	9.0	9.0
Subjective well-being (in 4 years) - mother	1831	6.8	2.0	0.0	7.0	9.0	10.0
Poor health - mother	1829	42.1	8.5	20.0	41.0	67.0	84.0
Age mother	1859	0.7	0.4	0.0	1.0	1.0	1.0
Urban	1706	5.2	1.9	2.0	5.0	11.0	16.0
Household size	1785	0.1	0.3	0.0	0.0	1.0	1.0
Max level educ caregiver=none	1785	0.4	0.5	0.0	0.0	1.0	1.0
Max level educ caregiver=primary	1785	0.4	0.5	0.0	0.0	1.0	1.0
Max level educ caregiver=secondary	1785	0.2	0.4	0.0	0.0	1.0	1.0
Max level educ caregiver=more than secondary	1824	0.8	0.4	0.0	1.0	1.0	1.0
Mother is married	1860	0.5	0.5	0.0	0.0	1.0	1.0
HH wealth index over 70th percentile	1857	15.0	0.3	14.0	15.0	16.0	16.0

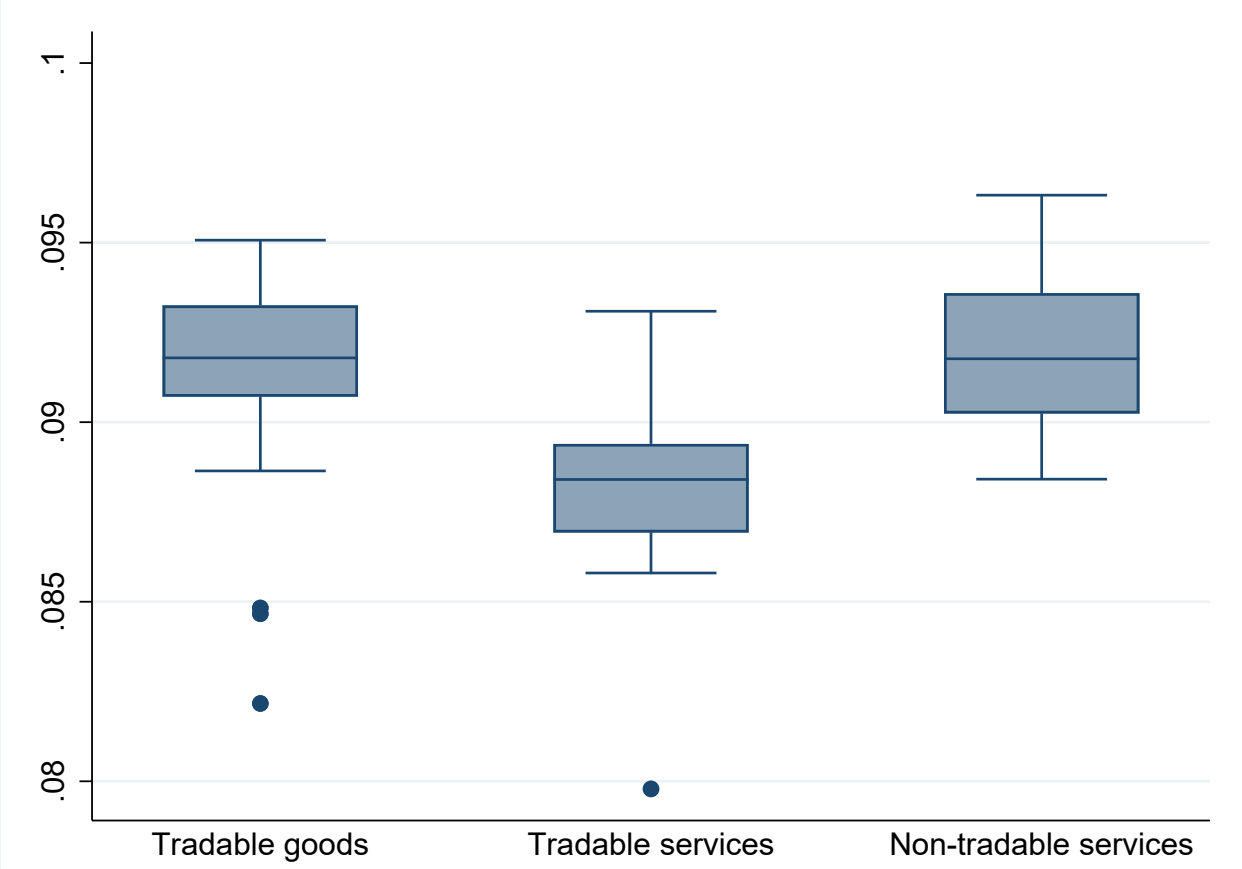
Notes: Source: Young Lives - Rounds 4 and 5 (20013-2016). Sample: younger cohort.

Table A.10: Distribution of Employment by Sector and Department

Department	Tradable goods (%)	Tradable services (%)	Non-tradable services (%)
Amazonas	52.6	27.8	19.6
Ancash	39.7	39.0	21.3
Apurimac	53.4	32.3	14.3
Arequipa	23.5	52.7	23.7
Ayacucho	49.4	34.6	15.9
Cajamarca	61.9	24.3	13.9
Callao	12.3	54.5	33.1
Cusco	40.7	40.6	18.6
Huancavelica	66.4	23.7	9.9
Huanuco	50.8	29.8	19.4
Ica	23.4	53.9	22.7
Junín	41.0	42.4	16.7
La Libertad	29.7	46.5	23.9
Lambayeque	26.3	48.7	24.9
Lima	13.7	53.9	32.4
Loreto	23.2	50.3	26.4
Madre de Dios	17.7	60.1	22.3
Moquegua	27.1	44.9	28.0
Pasco	43.0	34.3	22.6
Piura	27.9	45.9	26.2
Puno	55.4	33.4	11.2
San Martín	36.0	41.5	22.5
Tacna	18.1	58.2	23.7
Tumbes	11.2	59.2	29.6
Ucayali	22.4	55.1	22.5

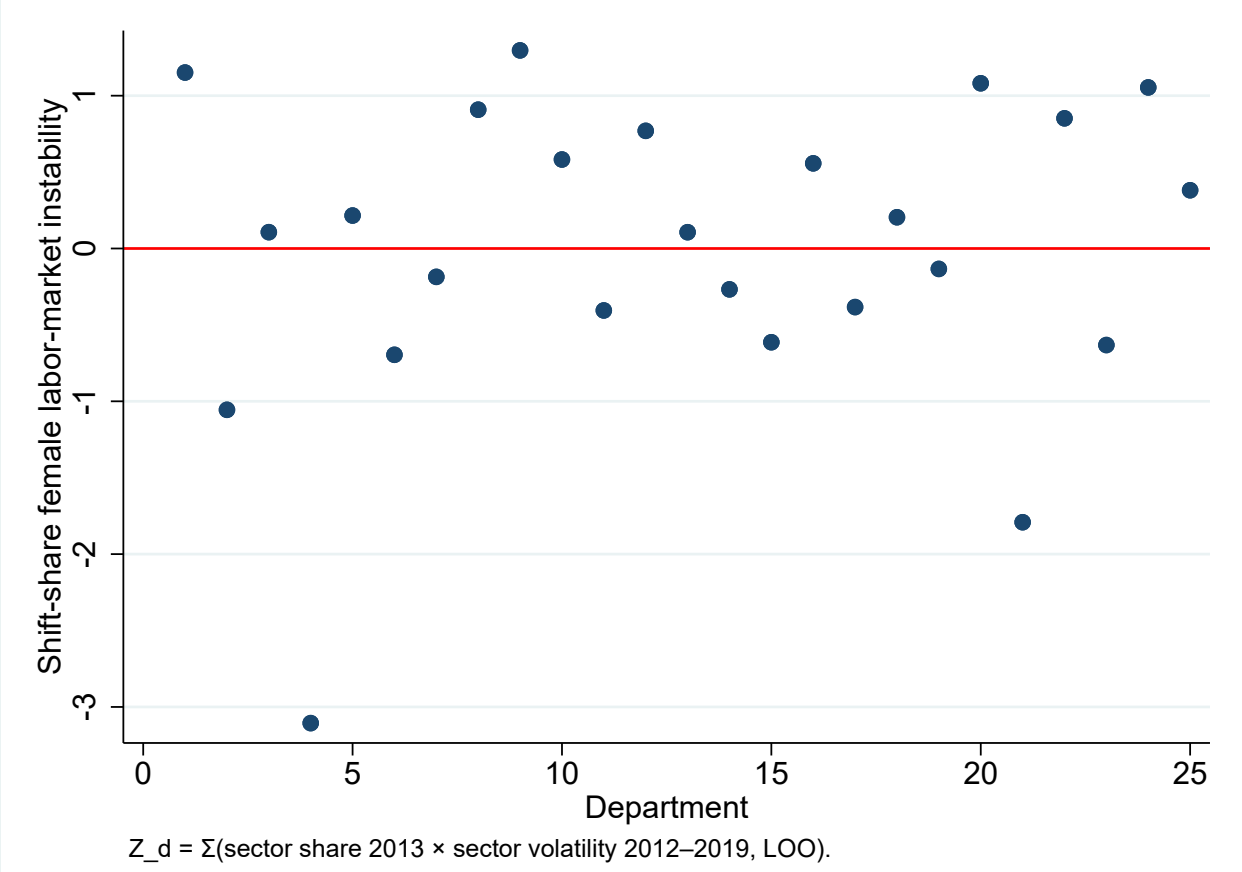
Notes: The table reports the distribution of female employment across broad sectors by department, expressed as percentages. Sectoral shares are computed using ENAHO 2013 data for women aged 14–65 and sum to 100 within each department. Sectors are grouped into tradable goods, tradable services, and non-tradable services following the classification described in Section 3.3.

Figure A.3: Sector-level female employment volatility (2012–2019)



Notes: The figure reports the distribution of sector-level female employment volatility, measured as the standard deviation of yearly log employment growth over the period 2012–2019. Volatility is computed using a leave-one-out procedure and is shown separately for tradable goods, tradable services, and non-tradable services. Each observation corresponds to a department–sector cell for women aged 14–65. Boxes represent interquartile ranges; whiskers denote the 5th and 95th percentiles.

Figure A.4: Variation in female labor-market instability across departments



Notes: Each dot represents a department. The shift-share measure is constructed as the sum of female sectoral employment shares in 2013 multiplied by sector-level employment volatility over 2012–2019, using a leave-one-out procedure. The horizontal line indicates zero.

Chapter 3

Beyond the Bell: Inequality in Adolescent Socio-Emotional Skills and Extended School Days

Abstract

This study examines how extended school-day reforms affect adolescents' socio-emotional development. It studies Peru's *Jornada Escolar Completa* (JEC), introduced in 2015 to lengthen the public secondary school day and reorganize school routines, using panel data from Young Lives Peru and a continuous measure of departmental exposure based on the share of public secondary schools adopting the reform. The analysis estimates Difference-in-Differences models with individual fixed effects and allows treatment effects to vary across the baseline distribution of socio-emotional skills. The results reveal strong heterogeneity. Exposure to JEC is associated with positive effects on self-efficacy, self-esteem, peer relations, and pride among adolescents in the lowest quartile of the baseline distribution, while effects become weaker and turn negative for those in the highest quartile, implying a compression of socio-emotional outcomes. In contrast, cognitive effects are smaller and largely concentrated among initially low-performing students. Time-use evidence shows that the reform increased time spent at school and studying, suggesting that the reorganization of daily routines is one channel through which the reform operated. Overall, the findings indicate that extended school-day policies can reshape the distribution of socio-emotional skills in the short run and that their effects depend critically on adolescents' initial conditions.

3.1 Introduction

Education policies that extend instructional time are often justified by the expectation that more time in school improves learning and broader developmental outcomes. However, the empirical literature provides mixed and context-dependent evidence. Early reviews emphasize that the relationship between time and achievement is neither mechanical nor guaranteed, as gains depend critically on how additional time is used and on the quality of instruction (Patall et al., 2010). More recent contributions similarly show that while additional instructional time can raise achievement, its effectiveness varies with classroom environments, implementation features, and students' ability to translate time into learning (Rivkin and Schiman, 2015;

Cattaneo et al., 2017). Evidence from Latin America reflects this ambiguity: extended-day reforms often generate positive effects on academic outcomes, but these impacts are heterogeneous and sensitive to context, implementation, and exposure (Quintão et al., 2024; Padilla-Romo, 2022; Cabrera-Hernández et al., 2023).

This pattern is consistent with a large literature emphasizing treatment effect heterogeneity, whereby average effects mask differential responses depending on individuals' initial conditions (Angrist, 2004). In the context of extended school-day policies, a central implication is that the effects of extended school-day policies are inherently conditional on students' baseline position in the skill distribution. Importantly, existing evidence also suggests that additional instructional time can have distributional consequences. For instance, Cattaneo et al. (2017) show that gains from increased instruction time vary by ability and may widen within-school disparities, while Attanasio et al. (2020) document substantial and persistent inequality in socio-emotional skills, particularly at the lower end of the distribution. These findings highlight that the key policy question is not only whether extended time improves outcomes on average, but how it reshapes their distribution.

A further distinction that has received comparatively less attention is the level at which these reforms operate. Much of the existing evidence focuses on primary education, where extended time often acts as both an educational and childcare intervention. In contrast, extensions at the secondary level occur at a stage when socio-emotional skills, peer interactions, and behavioral responses play a more prominent role in shaping outcomes. For adolescents, reallocations of time between school, home, and peer environments may have implications that go beyond academic achievement, affecting socio-emotional development, exposure to risk, and the structure of daily routines (Dominguez and Ruffini, 2023). This suggests that the effects of extended school-day policies in secondary education may differ qualitatively from those documented in primary settings, and that socio-emotional outcomes are a central margin along which these policies may operate, potentially in ways that depend on how adolescents adjust to common changes in time allocation and constraints.

This chapter studies Peru's *Jornada Escolar Completa* (JEC) reform, introduced in 2015 to extend the public secondary school day to eight pedagogical hours alongside complementary investments in infrastructure, pedagogy, school management, and student support. In addition to increasing instructional time, the reform incorporated school-level support services, including the presence of psychopedagogical teams, which are expected to directly influence students' socio-emotional development. Implementation was selective and capacity-based rather than random, generating cross-regional differences in exposure intensity over the early years of the program. The Young Lives (YL) Peru panel allows adolescents to be followed across this institutional change: round 4 was collected in 2014, prior to the reform, and round 5 in 2016, after implementation.

Agüero et al. (2021) provide the main causal evidence on the reform using a regression discontinuity design based on the school-selection rule. They show that JEC increased academic achievement, with particularly large gains in mathematics (around 0.23–0.24 standard deviations) and smaller but positive effects in reading. They also document several mechanisms behind these average impacts: students in treated schools spent about two additional hours at school, reduced time in household chores, leisure, and sleep, but did not reduce studying at home; schools received greater pedagogical support and technological resources; and the reform was associated with improvements in technical and socio-emotional skills. However, this evidence is primarily framed in terms of average treatment effects. It therefore leaves open whether these gains were broadly shared or instead concentrated among students located at particular points of the initial

skill distribution.

The contribution of this chapter is to address that question directly by examining the distributional effects of JEC on adolescents' socio-emotional outcomes. The Peruvian JEC joins a broader class of extended-day reforms in Latin America. Evaluations from multiple contexts document both their pedagogical benefits and their heterogeneous effects. In Chile, Bellei (2009) find that increased instructional time improved standardized test scores but required several years to materialize, with uneven effects across socioeconomic strata. In Colombia, Hincapié (2016) document gains in academic achievement and grade progression, particularly among disadvantaged students. In Mexico, Padilla-Romo (2022) and Cabrera-Hernández et al. (2023) show that full-time schooling improves test scores and educational trajectories, although the magnitude and persistence of these effects depend on exposure and implementation, and may be sensitive to school switching and selection.

Extended schedules also reshape household behavior and time allocation. Evidence from Chile shows that longer school days can improve mothers' labor market outcomes (Berthelon et al., 2024), while other studies document adjustments in parental investments and home inputs in response to increased school-provided resources (Das et al., 2013; Pop-Eleches and Urquiola, 2013). These mechanisms align with models of human capital formation in which households adjust investments and expectations in response to changing constraints (Carneiro and Heckman, 2003). Consistent with this perspective, evidence from Peru shows that additional income sources can reshape household expenditure patterns and act as a buffer against shocks, affecting how resources are allocated across competing uses (Berloffa and Giunti, 2019). In the same sense, extended exposure to the school environment during adolescence may alter peer interactions, supervision, and daily routines, with potential implications for socio-emotional development. These mechanisms are likely to be heterogeneous: when institutional changes alter how time is allocated across school, home, and alternative supervisory environments, their effects may depend on the relative productivity of these inputs and on household characteristics shaping investment decisions, rather than operating uniformly across individuals (Brilli, 2022).

The empirical question guiding this study is whether exposure to JEC generates differential effects across the baseline distribution of children's skills, and whether these differences vary across socioeconomic and demographic subgroups. The empirical strategy combines a Difference-in-Differences design with individual and round fixed effects, and an intention-to-treat measure of departmental exposure to JEC. Socio-emotional outcomes are constructed from harmonized indices based on the YL Feelings and Attitudes module (self-efficacy, self-esteem, pride, and peer relations), allowing for a detailed analysis of distributional impacts.

The main findings reveal substantial heterogeneity in the effects of JEC across the baseline distribution of children's skills. The program generates positive and sizable gains among children in the lowest quartile, while effects attenuate across the distribution and become negative for those at the top, implying a compression of socio-emotional outcomes. In contrast, effects on cognitive outcomes are smaller and display weaker heterogeneity. Time-use evidence suggests that these patterns are accompanied by a reallocation of daily activities, particularly increases in time spent at school and studying. Additional heterogeneity across demographic and contextual subgroups is limited and not systematically supported by joint tests, indicating that baseline skill position is the primary dimension along which effects differ. This pattern indicates that the effects of the reform are fundamentally conditional on individuals' initial position in the distribution, rather than reflecting a uniform impact across students.

These results contribute to several strands of the literature. First, they add to evaluations of extended school-day reforms in Latin America by documenting heterogeneous effects across the baseline distribution of children's skills, complementing existing evidence focused primarily on average impacts. Second, they contribute to the literature on inequality and skill formation by showing that policy-induced changes in time allocation can compress the distribution of socio-emotional outcomes, with gains concentrated among initially disadvantaged children and weaker or negative effects at the top. Third, they highlight the importance of socio-emotional skills as policy-relevant outcomes that respond to institutional changes, extending existing evidence that emphasizes their role in human capital formation and their unequal distribution across individuals.

A growing body of research treats socio-emotional (SE) skills as central components of human capital. Evidence from the Young Lives study has played a key role in advancing this literature. Mitchell et al. (2020) construct harmonized indices of self-esteem, pride, and peer relations using factor analysis of the Feelings and Attitudes module, which have been widely adopted in subsequent work, including Baez et al. (2025) and the present study. These measures capture distinct but related dimensions of adolescents' self-concept, emotional regulation, and social interactions. Empirical evidence shows that SE skills are responsive to family environments and broader structural conditions: Mitchell et al. (2025) and Baez et al. (2025) document their sensitivity to parental expectations and maternal well-being, while Moroni et al. (2025) highlight the persistence of early socio-emotional investments over time. Related work also emphasizes the role of contextual shocks. For example, Hidalgo-Arestegui et al. (2025) show that maternal exposure to Peru's civil conflict has long-lasting intergenerational effects on children's socio-emotional outcomes, particularly agency and pride, operating through reduced parental investments and diminished empowerment.

Socio-emotional skills are shaped by both external environments and intra-household processes. The present chapter extends this framework to an institutional setting, examining how an educational reform that alters adolescents' daily schedules and constraints affects socio-emotional outcomes. By linking the JEC reform to changes along the distribution of skills, it provides new evidence on how institutional interventions can reshape inequality within cohorts, rather than shifting outcomes uniformly.

The remainder of the chapter is structured as follows. The next section outlines the institutional background of the reform. Section 3.3 describes the Young Lives Peru data, the construction of socio-emotional indices and the departmental exposure measure and descriptive statistics. The empirical strategy is then presented in Section 3.4, detailing the Difference-in-Differences framework and identification assumptions. Section 3.5 reports the main estimates and heterogeneity across the baseline distribution and discusses potential mechanisms. Finally Section 2.5 concludes. An Appendix includes complementary material.

3.2 Institutional Background: The Jornada Escolar Completa Reform in Peru

Peru has experienced substantial progress in expanding access to education over the past two decades, with enrollment rates approaching universal coverage at the primary level and high participation in secondary education, alongside increasing access to pre-primary and tertiary levels (OECD, 2026). However, these aggregate gains conceal persistent inequalities in both access to quality education and learning outcomes. Socio-economic background and geographic location remain key determinants of educational opportunities,

with disadvantaged, rural, and indigenous populations systematically facing weaker schooling conditions and lower learning achievement. Despite improvements in average performance, a large share of students continues to fall below minimum proficiency levels, and the quality of provision remains highly uneven across schools and regions (OECD, 2026). Peru also exhibits high levels of socio-economic segregation across schools, implying that students from different backgrounds are exposed to markedly different learning environments.

National descriptive evidence reinforces these disparities. While access to primary education is nearly universal, inequalities become more pronounced at later stages of the educational cycle. At the secondary level, enrollment and attendance gaps persist across both socio-economic status and geographic location. For adolescents aged 12 to 16, net enrollment rates remain below full coverage and are systematically lower among poorer households and in rural areas (INEI, 2024). These differences reflect not only constraints in access but also inequalities in progression, including higher rates of grade delay and incomplete trajectories among disadvantaged groups. As a result, the transition into and completion of secondary education emerges as a central margin along which educational inequality is reproduced (INEI, 2024).

These patterns point to a system in which expansion in coverage has not been accompanied by a corresponding equalization in opportunities or learning conditions. The Peruvian education system is organized into three levels: pre-primary, primary, and secondary education, which are compulsory under the 2003 General Law of Education. Pre-primary education (ages 3 to 5) is delivered through both formal institutions and community-based programs, particularly in rural areas, followed by six years of primary and five years of secondary schooling. While coverage has expanded substantially across all levels, learning outcomes remain relatively low and unequally distributed. Evidence from international assessments indicates that student performance is strongly associated with socioeconomic background, with a substantial share of variation in test scores explained by family characteristics. Moreover, these disparities emerge early and persist throughout the schooling cycle, suggesting that the education system has been only partially effective in equalizing opportunities across students (Ngoy et al., 2024). Within this context, policy efforts have increasingly focused on improving both the quantity and quality of instructional time in public secondary education.

In response to these constraints, the *Jornada Escolar Completa* (JEC) reform was introduced by the Peruvian Ministry of Education in 2015 as a new service-delivery model for public secondary schools. Prior to the reform, most public secondary institutions operated under a multi-shift system due to infrastructure limitations, dividing students into morning and afternoon cohorts and thereby restricting effective instructional time relative to private schools. The central objective of JEC was to extend learning time and reorganize the provision of secondary education within the public system (Ministerio de Educación del Perú, 2015).

The reform expanded the school schedule to eight pedagogical hours per day and was embedded within a broader institutional redesign. In addition to increasing classroom instruction, JEC incorporated structured academic reinforcement, supervised study time, and tutorial support. The model also introduced complementary inputs, including pedagogical materials, teacher training, enhanced use of information and communication technologies, and additional staff such as pedagogical coordinators and psychosocial support personnel. JEC thus combined a quantitative expansion of instructional time with qualitative changes in school organization and educational inputs (Ministerio de Educación del Perú, 2015).

Implementation was progressive rather than universal. Using administrative data from the 2013 *Censo*

Escolar, the Ministry identified a pool of eligible schools and selected an initial group of institutions for early adoption. Eligibility was determined by pre-existing institutional characteristics, including operating in a single shift, having a sufficient number of sections (with a sharp increase in eligibility at eight sections), and possessing adequate infrastructure to accommodate the extended schedule and complementary activities. From this pool, approximately 1,000 out of around 1,360 eligible public secondary schools were incorporated into the program in 2015, with further expansion planned in subsequent years (Ministerio de Educación del Perú, 2015).

As a result, exposure to the reform varied substantially across departments during the early phase of implementation. Areas with a higher concentration of schools meeting eligibility criteria experienced greater initial program intensity. Moreover, because JEC applied exclusively to public secondary schools, students within the same locality could be exposed to different school-day regimes, generating heterogeneity in daily schedules, time use, and peer interactions. Given that the reform substantially altered adolescents' allocation of time and school environments, its effects may extend beyond cognitive outcomes to broader dimensions of development.

Empirical evidence on the effects of JEC is provided by Agüero et al. (2021), who exploit the discontinuity in selection probability at the eight-section threshold using a regression discontinuity design. The results indicate that the reform led to significant improvements in academic achievement, increasing mathematics test scores by approximately 0.23–0.24 standard deviations, with smaller but positive effects on reading outcomes.

The evidence also sheds light on the mechanisms underlying these effects. The extension of the school day translated into a substantial increase in time spent at school, partially offset by reductions in time allocated to household chores and leisure, and to a lesser extent sleep, with limited changes in time devoted to home study (Agüero et al., 2021). At the institutional level, treated schools experienced improvements in pedagogical support, teacher specialization, and access to technological resources. At the student level, the reform is also associated with changes in non-cognitive outcomes related to educational expectations, self-esteem, effort, and school engagement.

While this evidence establishes that JEC affected both cognitive and non-cognitive dimensions, it is primarily framed in terms of average treatment effects. Such estimates do not reveal whether these effects are homogeneous across students or vary according to initial conditions. In particular, they do not capture whether the reform leads to convergence or divergence in socio-emotional skills across the distribution.

The analysis in this paper addresses this limitation by examining the distributional effects of the reform. By allowing treatment effects to vary across the baseline distribution of socio-emotional outcomes, the empirical strategy provides a more nuanced assessment of how institutional changes shape developmental trajectories and whether they contribute to reducing or amplifying pre-existing inequalities.

3.3 Data

The analysis uses data from the Young Lives (YL) longitudinal survey for Peru, a cohort study designed to track child development in low- and middle-income settings. The Peruvian sample was first collected in 2002 and follows a cohort of approximately 2,000 children from early childhood into adolescence and early adulthood, with survey rounds conducted at ages 1, 5, 8, 12, and 15, for the younger cohort. The present study focuses on this cohort and uses information from Rounds 4 (2013) and 5 (2016/17), corresponding to

early and mid-adolescence.

The survey employs a multi-stage sampling design. Twenty sentinel sites were selected across the country to capture geographic and socio-economic diversity, and within each site, households with age-eligible children were randomly sampled. While not nationally representative, the sample covers a wide range of living conditions and explicitly excludes only the top 5% of the income distribution (Escobal and Flores, 2008). Young Lives collects detailed information on multiple dimensions of child well-being, including cognitive achievement, socio-emotional skills, health, and family environment, as well as parental characteristics, expectations, and household conditions. This breadth of information, combined with its longitudinal structure, makes it particularly well suited for analyzing how institutional changes and economic conditions shape child development over time.

Socio-emotional outcomes are drawn from the Feelings and Attitudes module, which contains self-assessment items reported by the index child. Following Mitchell et al. (2020) and Hossain and Jukes (2025), four socio-emotional domains are considered: self-efficacy, self-esteem, peer relations, and pride.

The four domains capture complementary aspects of adolescents' self-perception and social functioning. Self-efficacy reflects beliefs about one's ability to cope with challenges, solve problems, and achieve goals. The items underlying this domain capture persistence, adaptability, and perceived control over outcomes (e.g., solving difficult problems, handling unexpected events, and finding solutions under pressure), closely aligning with standard definitions of self-efficacy as the perceived capacity to manage tasks and life situations (Hossain and Jukes, 2025). Self-esteem captures global self-worth and self-evaluation, based on items derived from the Rosenberg scale that assess whether adolescents view themselves as capable, valuable, and comparable to others (Rosenberg, 1965; Kling et al., 1999). These items reflect general self-regard rather than task-specific confidence, distinguishing this domain from self-efficacy despite their strong empirical correlation.

Peer relations measure perceived social integration and acceptance among age peers. The corresponding items capture the ease of forming friendships, popularity, and the ability to get along with others (e.g., having many friends, being liked by peers, and interacting easily in social settings). This domain reflects adolescents' perceived position within their peer environment and their relational competence. Finally, the pride index captures a narrower dimension of material self-regard, based on items related to satisfaction with personal appearance and possessions (e.g., clothing and shoes). While limited in scope relative to the other domains, this measure reflects status-related aspects of identity that are salient during adolescence, particularly in contexts where material conditions shape social inclusion. The selection of items within each domain follows the literature and is further supported by exploratory factor analysis, ensuring that retained indicators load consistently on the intended latent constructs.

Later, the outcomes are constructed as latent variables using a grouped Generalized Structural Equation Modeling (GSEM) framework. The four domains are modeled jointly as correlated latent factors, each measured through multiple ordinal indicators recorded on a four-point Likert scale ranging from "strongly disagree" to "strongly agree." The model is estimated with an ordered logit link, allowing for item-specific thresholds and factor loadings. Measurement parameters are constrained to be equal across rounds, so that the latent constructs are defined consistently over time. Latent variances are normalized to one in both rounds, while latent means are fixed to zero in Round 4 and estimated freely in Round 5, implying that the post-reform latent means are interpreted relative to the pre-reform distribution. Factor scores are recovered as posterior predictions of the latent variables and standardized to have mean zero and unit variance. This

normalization facilitates interpretation and allows estimated reform effects to be expressed in standard deviation units. Table A.1 reports the description of items of each factor and their corresponding factor loadings. Factor loadings capture the relative informativeness of each item in measuring the latent construct, with larger coefficients indicating stronger alignment with the underlying dimension. The estimates show consistently high discrimination across most items, particularly within self-esteem and peer relations (with loadings above 1) and pride, while self-efficacy displays greater dispersion, with three items between 0.8 and 1, and 1 item with 0.4, indicating more limited contribution of some variables to the latent trait.

The latent-variable framework is particularly appropriate in this setting because socio-emotional skills are not directly observed and are measured with error at the item level. By aggregating information across multiple indicators, the model reduces idiosyncratic noise and yields more reliable measures of underlying constructs. Table 3.1 reports basic reliability statistics. Internal consistency is acceptable for self-efficacy, self-esteem, and peer relations, with Cronbach's alpha ranging from 0.71 to 0.76. The pride index has lower reliability (0.54), reflecting the fact that it is constructed from only two items.

Table 3.2 reports the estimated correlations across latent domains. The results indicate that the four socio-emotional dimensions are not orthogonal. Instead, they are all positively and significantly correlated in both rounds. In particular, self-efficacy and self-esteem exhibit a very high correlation, increasing from 0.77 in Round 4 to 0.91 in Round 5. Correlations across the remaining domains are also positive and substantial. These patterns suggest that the four indices capture conceptually distinct but empirically interrelated dimensions of adolescents' socio-emotional development, rather than independent traits.

The estimation sample is restricted to adolescents enrolled in public secondary schools, which correspond to the population directly exposed to the JEC reform. Tables 3.3 and 3.4 present summary statistics for Rounds 4 and 5. The sample includes 970 adolescents in each round, reflecting the balanced panel structure. Children are, on average, 12 years old in Round 4 and 15 years old in Round 5, with an equal gender distribution. Caregivers are approximately 39–42 years old on average, and around 80% are married. Roughly 70% of the sample resides in urban areas, and average household size is about five members. Educational attainment among caregivers is concentrated at the primary and secondary levels, with about 40% in each category and only a small fraction reporting no education or education beyond secondary. Approximately 30–40% of households are above the 70th percentile of the wealth index, indicating moderate socioeconomic variation within the sample. Overall, the distributions of key demographic and household characteristics remain stable across rounds, supporting the comparability of the pre- and post-reform samples.

Figures 3.1 and 3.2 further illustrate the distribution of cognitive and socio-emotional outcomes across rounds. For socio-emotional outcomes, the figures exhibit sharper and more symmetric distributions centered around zero. Across all four domains, the Round 5 distributions appear more concentrated relative to Round 4, with higher density around the mean and thinner tails. This pattern is consistent with a compression of the distribution, whereby variation in socio-emotional skills decreases over time. In contrast, for cognitive outcomes, the distribution of mathematics scores shifts slightly to the left in Round 5, suggesting a modest decline in average performance, while language scores display a more concentrated distribution with limited change in central tendency.

Exposure to the reform is measured at the department level using an intensity-based approach that reflects the initial territorial rollout of the JEC program. Specifically, treatment intensity is defined as the share of public secondary schools within each department that were incorporated into JEC in 2014, prior

to the post-treatment survey wave. The numerator is constructed from the official list of schools selected into the program, as established by the ministerial resolution creating the first wave of JEC (RM N° 451-2014-MINEDU). The denominator is obtained from the 2013 *Censo Escolar*, which was the administrative source used by the Ministry of Education to identify the pool of eligible public secondary schools based on pre-reform capacity criteria, including shift structure, size, and infrastructure conditions (Agüero et al., 2021). This variable therefore captures pre-determined cross-department variation in exposure arising from the administrative allocation of the reform during its initial phase. The department-level exposure measure is then interacted with a post-reform indicator to construct the Difference-in-Differences treatment variable.

Table A.2 summarizes the distribution of treatment intensity. Exposure varies substantially across departments, with shares ranging from 0.022 to 0.236. The average departmental exposure is approximately 0.121, and the interquartile range indicates that most departments lie between roughly 0.093 and 0.162. This distribution shows that the reform generated meaningful territorial heterogeneity in initial program penetration, which constitutes the main source of identifying variation in the empirical analysis.

Figure A.1 complements this description by mapping treatment intensity across departments. The spatial distribution confirms that exposure was not concentrated in a single part of the country, but instead varied across coastal, highland, and jungle regions. The map is useful descriptively because it illustrates the broad geographic spread of the reform and the existence of substantial cross-department heterogeneity. At the same time, it should be interpreted as descriptive evidence on variation in exposure rather than as evidence on identification.

To further investigate mechanisms and heterogeneous responses, additional variables are incorporated beyond those described above. For the analysis of mechanisms, time-use variables are constructed from adolescents' self-reported allocation of hours across daily activities, including time spent at school, studying, leisure, sleep, domestic tasks, and caring for others. Each measure is defined as the share of total daily time devoted to a given activity, computed as the number of hours reported for that activity divided by the total number of hours in the day. This normalization ensures comparability across individuals and captures how exposure to the reform reallocates time across competing uses.

For the heterogeneity analysis, a set of individual, household, and community characteristics is used to assess whether responses to the reform differ across observable dimensions. Individual-level variables include child gender. Household characteristics include caregiver gender, caregiver marital status, and household wealth, proxied by the distribution of a wealth index. Community-level variables are drawn from the Young Lives community questionnaire and include indicators of local risk environments, such as the presence of drug selling, drug consumption, and juvenile gangs, as reported by the community informant. These variables allow the analysis to explore whether contextual conditions and household characteristics mediate the effects of the reform.

3.4 Empirical Strategy

The empirical strategy exploits cross-department variation in exposure to the *Jornada Escolar Completa* (JEC) reform, combined with individual and round fixed effects. Treatment is defined as a continuous measure corresponding to the share of public secondary schools in each department that were selected into JEC in 2014, prior to the post-treatment survey wave. This variable captures the intensity of potential exposure to the reform and reflects the administrative allocation of the program across territories. Because

Table 3.1: Measurement properties of socio-emotional indices

Factor	Items	Cronbach's α	Avg. inter-item covariance
Self-efficacy (F1)	10	0.714	0.075
Self-esteem (F2)	8	0.715	0.071
Peer relations (F3)	8	0.758	0.118
Pride (F4)	2	0.541	0.203

Notes: Reliability statistics computed from Young Lives Round 4 data. Cronbach's alpha measures internal consistency of each scale.
Source: Author's calculations based on Young Lives Peru data.

Table 3.2: Latent correlations across socio-emotional domains

	F1	F2	F3	F4
Panel A. Round 4				
F1 Self-efficacy	1.000	0.772***	0.638***	0.444***
F2 Self-esteem		1.000	0.695***	0.589***
F3 Peer relations			1.000	0.419***
F4 Pride				1.000
Panel B. Round 5				
F1 Self-efficacy	1.000	0.910***	0.663***	0.621***
F2 Self-esteem		1.000	0.690***	0.717***
F3 Peer relations			1.000	0.477***
F4 Pride				1.000

Notes: Entries report correlations between latent socio-emotional factors estimated from the grouped GSEM model. Since factor variances are normalized to one in each round, covariance estimates correspond directly to correlations. All reported correlations are statistically significant at the 1% level.
Source: Author's calculations based on Young Lives Peru data.

assignment occurred at the school level and individual attendance to treated schools cannot be fully observed in the data, the estimates are interpreted as intention-to-treat (ITT) effects.

The main specification follows a Difference-in-Differences design with individual fixed effects and allows treatment effects to vary across the baseline distribution of each outcome:

$$Y_{idt} = \alpha_i + \gamma_t + \sum_{q=1}^{4} \beta_q \left(\text{JECIntensity}_d \times \text{Post}_t \times I\{Q_i = q\} \right) + X'_{idt}\theta + \varepsilon_{idt} \tag{3.1}$$

where Y_{idt} denotes the outcome for individual i in department d and round t, α_i are individual fixed effects, and γ_t are round fixed effects. Post_t equals one in the post-reform period. Q_i denotes quartiles of the baseline distribution of the corresponding outcome, constructed using pre-reform information and held fixed across periods. Thus, for each socio-emotional or cognitive outcome, heterogeneity is defined with respect to that outcome's own initial distribution. X_{idt} includes time-varying controls, and standard errors are clustered at the department level.

This specification allows the effect of treatment intensity to differ across baseline groups. In settings with continuous treatment, Difference-in-Differences estimators do not recover a single average treatment effect but rather weighted averages of marginal treatment effects across exposure levels (De Chaisemartin and d'Haultfoeuille, 2023; Baker et al., forthcoming). The coefficients β_q should therefore be interpreted as

Table 3.3: Descriptive statistics, Round 4

Variable	N	Mean	St dev.	Min.	Median	99th p.	Max.
Age child	970	11.9	0.3	11.0	12.0	12.0	13.0
Child is female	970	0.5	0.5				
Age caregiver	970	38.8	7.8	18.0	38.0	63.0	74.0
Urban	970	0.7	0.5				
HH size	970	5.3	1.8	2.0	5.0	11.0	18.0
Max level educ caregiver=none	970	0.1	0.3				
Max level educ caregiver=primary	970	0.4	0.5				
Max level educ caregiver=secondary	970	0.4	0.5				
Max level educ caregiver=more than secondary	970	0.1	0.3				
Caregiver is married	970	0.8	0.4				
HH wealth index over 70th percentile	970	0.3	0.5				

Notes: Sample restricted to adolescents enrolled in public secondary schools. Variables include demographic characteristics, and household controls.
Source: Young Lives Peru, Round 4.

Table 3.4: Descriptive statistics, Round 5

Variable	N	Mean	St dev.	Min.	Median	99th p.	Max.
Age child	970	15.0	0.3	14.0	15.0	16.0	16.0
Child is female	970	0.5	0.5				
Age caregiver	970	41.8	8.0	20.0	41.0	65.0	83.0
Urban	970	0.7	0.5				
HH size	970	5.3	1.9	2.0	5.0	11.0	14.0
Max level educ caregiver=none	970	0.1	0.3				
Max level educ caregiver=primary	970	0.4	0.5				
Max level educ caregiver=secondary	970	0.4	0.5				
Max level educ caregiver=more than secondary	970	0.1	0.3				
Caregiver is married	970	0.8	0.4				
HH wealth index over 70th percentile	970	0.4	0.5				

Notes: Sample restricted to adolescents enrolled in public secondary schools. Variables are defined consistently with Round 4.
Source: Young Lives Peru, Round 5.

quartile-specific exposure gradients, that is, as the differential change in outcomes associated with a marginal increase in departmental reform intensity in the post-reform period for individuals located at different points of the baseline distribution.

Identification relies on a parallel trends assumption adapted to the continuous-treatment setting. In the absence of the reform, the relationship between outcomes and treatment intensity should have evolved similarly across departments. In this context, the relevant identifying restriction is the absence of differential pre-trends in exposure gradients.

To assess this assumption, pre-trend tests are conducted using Rounds 3 and 4, both observed before the implementation of JEC. Because the socio-emotional items available in Round 3 do not exactly match those observed in Rounds 4 and 5, the pre-trend exercise is based on a harmonized index of general socio-emotional skills constructed separately within each round using the available items. Baseline quartiles are then defined using the distribution of this general factor in Round 3 and assigned to individuals, remaining fixed over time.

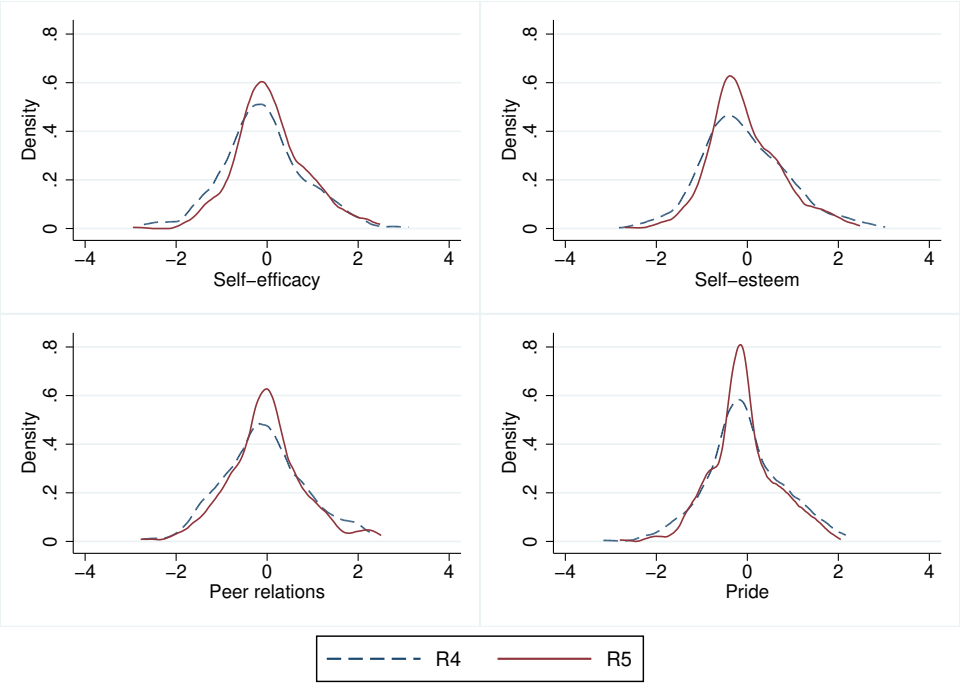


Figure 3.1: Distribution of socio-emotional outcomes across survey rounds

Notes: Kernel density estimates of standardized socio-emotional indices (self-efficacy, self-esteem, peer relations, and pride) for Rounds 4 (dashed line) and 5 (solid line).

The aggregate pre-trend test is based on the following specification:

$$Y_{idt} = \alpha_i + \gamma_t + \delta \left(\text{JECIntensity}_d \times \text{PreTrend}_t \right) + \varepsilon_{idt} \tag{3.2}$$

where PreTrend_t equals one in Round 4 and zero in Round 3. In this specification, the coefficient δ captures the change in the slope of the relationship between the outcome and treatment intensity between the two pre-reform periods. Under the identifying assumption, this differential slope should be equal to zero.

To evaluate whether pre-trends differ across the baseline distribution, the specification is then augmented by interacting the differential slope with quartiles of the Round 3 general factor. This allows the pre-reform exposure gradient to vary across baseline socio-emotional groups and provides a direct test of whether departments with different future treatment intensity were already on different trajectories for children located at different points of the initial distribution.

Figure 3.3 reports the results of these. The left panel presents the aggregate differential slope between R3 and R4, while the right panel reports quartile-specific differential slopes based on the Round 3 distribution of the general socio-emotional factor. In all cases, the estimated coefficients are small in magnitude and statistically indistinguishable from zero. The joint test of heterogeneous pre-trends across quartiles also fails to reject the null of equal trends. These results provide no evidence that departments with different levels of future reform exposure were already exhibiting systematically different pre-reform trajectories, either on average or across the baseline distribution of socio-emotional skills. Appendix Figure A.2 provides a complementary descriptive visualization of average outcomes across bins of treatment intensity in R3 and R4. The relationship between the general socio-emotional factor and treatment intensity appears stable

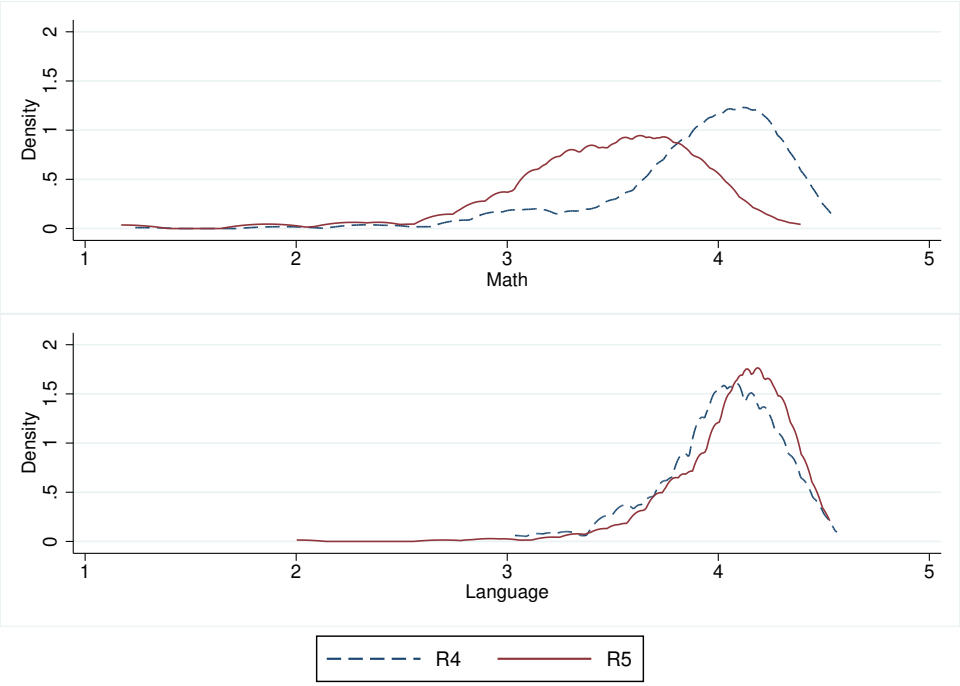


Figure 3.2: Distribution of cognitive outcomes across survey rounds

Notes: Kernel density estimates of standardized mathematics and language test scores for Rounds 4 (dashed line) and 5 (solid line).

across the two pre-reform rounds, with no visible divergence in slopes. While this figure is descriptive and does not constitute a formal test, it is consistent with the regression-based evidence. These findings support the identifying assumption that differential exposure to the reform is not correlated with pre-existing trends in outcomes.

3.5 Results

3.5.1 Main results

Table 3.5 reports the estimated effects of JEC exposure on socio-emotional and cognitive outcomes, allowing for heterogeneity across baseline quartiles. Given the continuous nature of treatment, coefficients are interpreted as post-reform changes in the slope of outcomes with respect to treatment intensity. The discussion focuses on the specifications without controls, since the corresponding estimates with controls are nearly identical in magnitude and significance, indicating that the results are highly stable to the inclusion of observable household and individual characteristics.

Across all socio-emotional domains, a clear and monotonic gradient emerges along the baseline distribution. For adolescents in the lowest quartile (Q1), exposure to JEC is associated with positive and precisely estimated effects in every domain: 0.088 for self-efficacy, 0.079 for self-esteem, 0.076 for peer relations, and 0.054 for pride. These are not isolated effects in a single dimension, but a coherent pattern of gains among those initially located at the bottom of the socio-emotional skill distribution.

For the second quartile (Q2), effects remain positive but are notably smaller. The coefficients are 0.026 for self-efficacy, 0.032 for self-esteem, and 0.032 for peer relations, while the estimate for pride is smaller

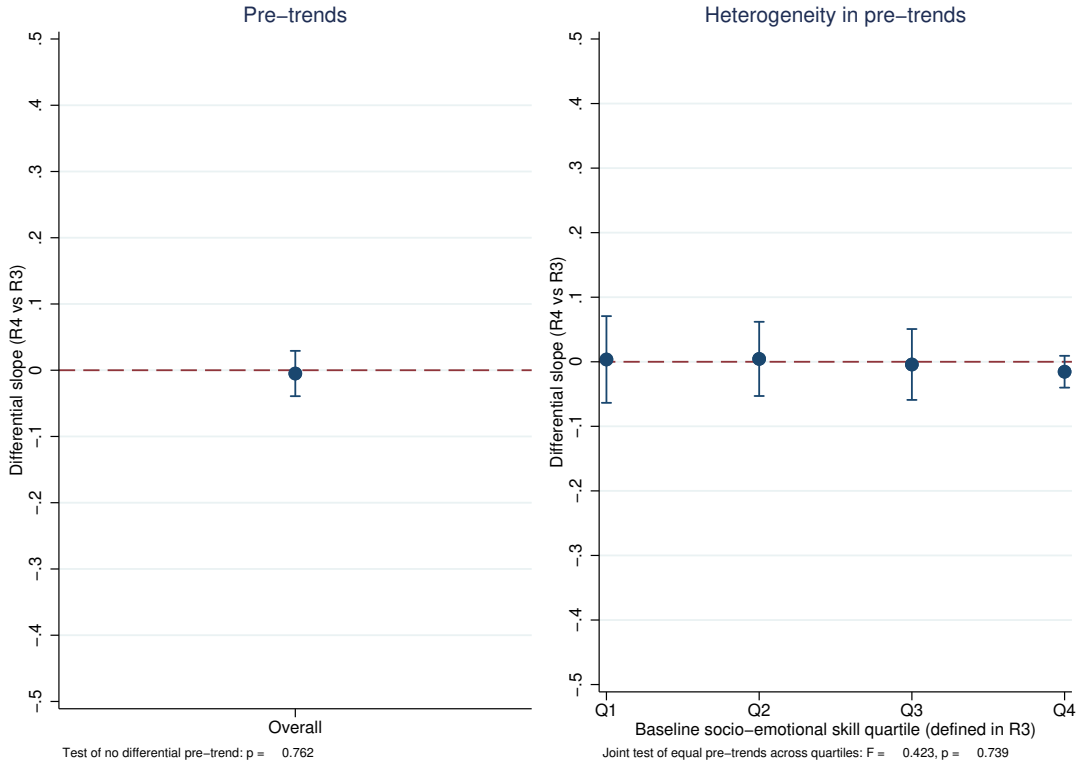


Figure 3.3: Pre-trend tests

Notes: The left panel reports the estimated differential slope of outcomes with respect to treatment intensity between R3 and R4. The right panel shows quartile-specific estimates based on baseline socio-emotional skill distribution. Confidence intervals are at the 95% level.

and statistically insignificant (0.013). This suggests that the benefits of exposure extend somewhat beyond the most disadvantaged group, but attenuate rapidly as baseline socio-emotional skills rise. For the third quartile (Q3), coefficients are close to zero across all socio-emotional outcomes: 0.003 for self-efficacy, -0.003 for self-esteem, -0.002 for peer relations, and -0.015 for pride. With the partial exception of pride, these estimates are statistically insignificant and substantively small, pointing to limited responsiveness in the middle of the distribution.

In contrast, adolescents in the top quartile (Q4) experience negative and statistically significant effects across all socio-emotional domains. The estimated coefficients are -0.048 for self-efficacy, -0.057 for self-esteem, -0.052 for peer relations, and -0.060 for pride. The magnitude of these losses is comparable, in absolute value, to the gains observed for Q1. The pattern is therefore not one of uniform improvement, but one of redistribution across the initial skill distribution.

These results indicate a compression of the socio-emotional distribution: exposure to the reform is associated with improvements at the bottom, negligible effects in the middle, and declines at the top. This is the central empirical result of the chapter. Rather than shifting the whole distribution upward, JEC appears to narrow socio-emotional gaps by disproportionately benefiting adolescents with lower baseline socio-emotional skills while constraining those who entered adolescence with stronger socio-emotional endowments.

One plausible interpretation of these results is that adolescents with lower initial socio-emotional skills

benefit from greater structure, supervision, and increased exposure to peer interactions within the school environment. In contrast, the effects for adolescents at the top of the distribution may relate to the relative importance of own investments versus parental inputs in the production of human capital during adolescence. As emphasized by Del Boca et al. (2017), the role of adolescents' own effort and time allocation becomes increasingly central in the production of human capital during teenage years, relative to earlier stages when parental inputs are more decisive. In this context, an extension of compulsory school time may have differential opportunity costs across the skill distribution. For adolescents with higher initial socio-emotional skills, who are more likely to engage in productive alternative activities, such as self-directed learning, extracurricular development, or peer interactions that reinforce non-cognitive skills, the reduction in discretionary time outside school may be particularly constraining. Consequently, the reallocation of time toward additional school hours could displace more efficient or developmentally enriching investments chosen by the adolescents themselves, thereby generating weaker or even negative marginal effects for this group.

Cognitive outcomes display a markedly different pattern. For mathematics, only the lowest quartile shows a positive and statistically significant effect (0.030), while the coefficients for Q2, Q3, and Q4 are 0.001, -0.003, and 0.003, respectively, and are all statistically insignificant. Language follows the same broad pattern: the effect for Q1 is positive and significant (0.016), whereas the remaining quartiles show estimates that are close to zero, including a small negative coefficient at the top (-0.004). In other words, cognitive gains are concentrated at the bottom, but there is no comparable evidence of strong losses among higher-performing students.

This distinction between socio-emotional and cognitive outcomes is important. In the socio-emotional domains, the reform generates a full gradient across quartiles, with positive effects at the bottom and negative effects at the top. In the cognitive domains, by contrast, the pattern is much more limited: the main beneficiaries are lower-performing adolescents, while the rest of the distribution is largely unaffected. This suggests that the mechanisms triggered by longer school days differ across dimensions of human capital.

Relative to the closest evidence for Peru, these results extend the findings in Agüero et al. (2021). They show that JEC improved average outcomes, including mathematics, reading, technical skills, and socio-emotional competencies The present results are consistent with that average-positive picture at the lower end of the distribution, but add an important layer that is not visible in mean effects: socio-emotional gains are not evenly shared. Once the analysis is organized by baseline quartiles, it becomes clear that the same reform that raises outcomes for adolescents at the bottom can be associated with reductions for adolescents at the top.

The results are also consistent with the broader regional evidence that full-time education often yields stronger benefits in more disadvantaged contexts. Hincapié (2016) finds positive effects of longer school days in Colombia, with larger impacts in poorer schools and rural areas, and the World Bank synthesis by Quintão et al. (2024) emphasizes that full-time schooling in Latin America tends to generate larger gains in more disadvantaged settings and can help reduce educational inequalities. The contribution here is to show that this logic extends beyond observable school or socioeconomic characteristics and operates within the distribution of students' baseline skills: heterogeneity is not only "between types of schools" or "between rich and poor," but also between adolescents who begin the reform with different levels of socio-emotional capacity.

At the same time, the present findings differ from the pattern documented by Bellei (2009) for cognitive

outcomes in Chile. The author shows that a longer school day generated larger academic gains in the upper part of the achievement distribution, especially beyond the 75th percentile, thereby increasing dispersion in test scores rather than compressing it. In contrast, the results here point to compression in socio-emotional outcomes. This difference is substantively meaningful: the effects of extended school time need not move in the same direction across domains. A policy can increase dispersion in academic performance while reducing dispersion in socio-emotional skills, or vice versa.

Finally, Durlak et al. (2011) provide a useful but distinct benchmark for interpreting the socio-emotional results. Their meta-analysis of 213 school-based Socio Emotional Learning interventions shows that schools can improve socio-emotional skills, attitudes, behavior, and academic performance, and that effects depend on implementation quality and the design of the intervention . Although that evidence does not concern extended school-day reforms or distributional heterogeneity, it reinforces the broader point that the school environment is a meaningful site of socio-emotional production. In that sense, the present findings are consistent with the idea that institutional changes in school time and organization can shape socio-emotional development; what this chapter adds is that these effects are strongly heterogeneous across the initial distribution of skills.

Overall, the evidence indicates that JEC exposure generates strong distributional effects in socio-emotional outcomes, characterized by compression driven by both gains at the bottom and losses at the top. Cognitive effects are smaller, concentrated among initially low-performing adolescents, and do not display the same full-gradient pattern. The stability of the estimates across specifications further supports the robustness of these findings.

Table 3.5: Effect of JEC on children socio-emotional indexes

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
	Self-efficacy		Self-esteem		Peer relations		Pride		Math		Language	
Treat*Post*Q1	0.088***	0.088***	0.079***	0.078***	0.076***	0.076***	0.054***	0.053***	0.030***	0.030***	0.016***	0.016***
	(0.012)	(0.012)	(0.013)	(0.013)	(0.011)	(0.011)	(0.010)	(0.009)	(0.007)	(0.008)	(0.003)	(0.003)
Treat*Post*Q2	0.026***	0.025***	0.032***	0.031***	0.032**	0.031**	0.013	0.013	0.001	0.001	0.004	0.005
	(0.008)	(0.008)	(0.010)	(0.010)	(0.012)	(0.012)	(0.013)	(0.013)	(0.006)	(0.006)	(0.003)	(0.003)
Treat*Post*Q3	0.003	0.002	-0.003	-0.004	-0.002	-0.003	-0.015*	-0.015	-0.003	-0.002	-0.001	0.000
	(0.011)	(0.012)	(0.014)	(0.013)	(0.014)	(0.014)	(0.008)	(0.009)	(0.005)	(0.005)	(0.002)	(0.002)
Treat*Post*Q4	-0.048**	-0.048**	-0.057**	-0.057**	-0.052**	-0.053**	-0.060***	-0.059***	0.003	0.004	-0.004**	-0.004**
	(0.018)	(0.018)	(0.021)	(0.021)	(0.021)	(0.022)	(0.017)	(0.018)	(0.005)	(0.005)	(0.002)	(0.002)
Obs.	1,940	1,940	1,940	1,940	1,940	1,940	1,940	1,940	1,886	1,886	1,892	1,892
Ind.	970	970	970	970	970	970	970	970	943	943	946	946
FE	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Controls	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y

Notes: Child fixed effects and round fixed effects are included in all specifications. Even-numbered columns additionally include time-varying controls: child age, child age squared, urban residence, caregiver age, household size, caregiver education, decile of income, and caregiver marital status. Standard errors, shown in parentheses, are clustered at the department level. Treatment effects are reported separately by baseline quartile of the corresponding outcome. All outcomes are standardized. The sample is restricted to the common estimation sample. * <0.10, ** <0.05, *** <0.01. *Source:* Young Lives Peru (Younger Cohort, Rounds 4-5) and Peru's Ministry of Education public administrative data.

3.5.2 Mechanisms and heterogeneities

To explore potential mechanisms, Figure 3.4 examines how exposure to JEC affects adolescents' time allocation across key activities: sleep, leisure, time at school, and studying, allowing for heterogeneity by baseline socio-emotional quartiles.

The results indicate that the reform led to a reallocation of time consistent with its design. Exposure to JEC increases time spent at school across all quartiles and socio-emotional domains, reflecting the mechanical effect of the extended school day. A similar, though more moderate, pattern is observed for studying time, with positive effects across baseline groups. In contrast, sleep and leisure exhibit small negative adjustments.

Importantly, the time-use results do not exhibit systematic heterogeneity across baseline quartiles. Estimated effects are similar in magnitude and direction for all groups, and joint tests generally fail to reject equality of coefficients across the distribution. Rather than weakening the interpretation, this pattern provides supporting evidence for the mechanism proposed in this paper. The reform induces broadly comparable changes in time allocation for all adolescents, more time at school and studying, and small reductions in other activities, yet socio-emotional responses differ markedly by baseline position. This suggests that the distributional effects are not driven by differential exposure to the time-use channel itself, but by how identical reallocations of time are translated into outcomes depending on initial socio-emotional endowments.

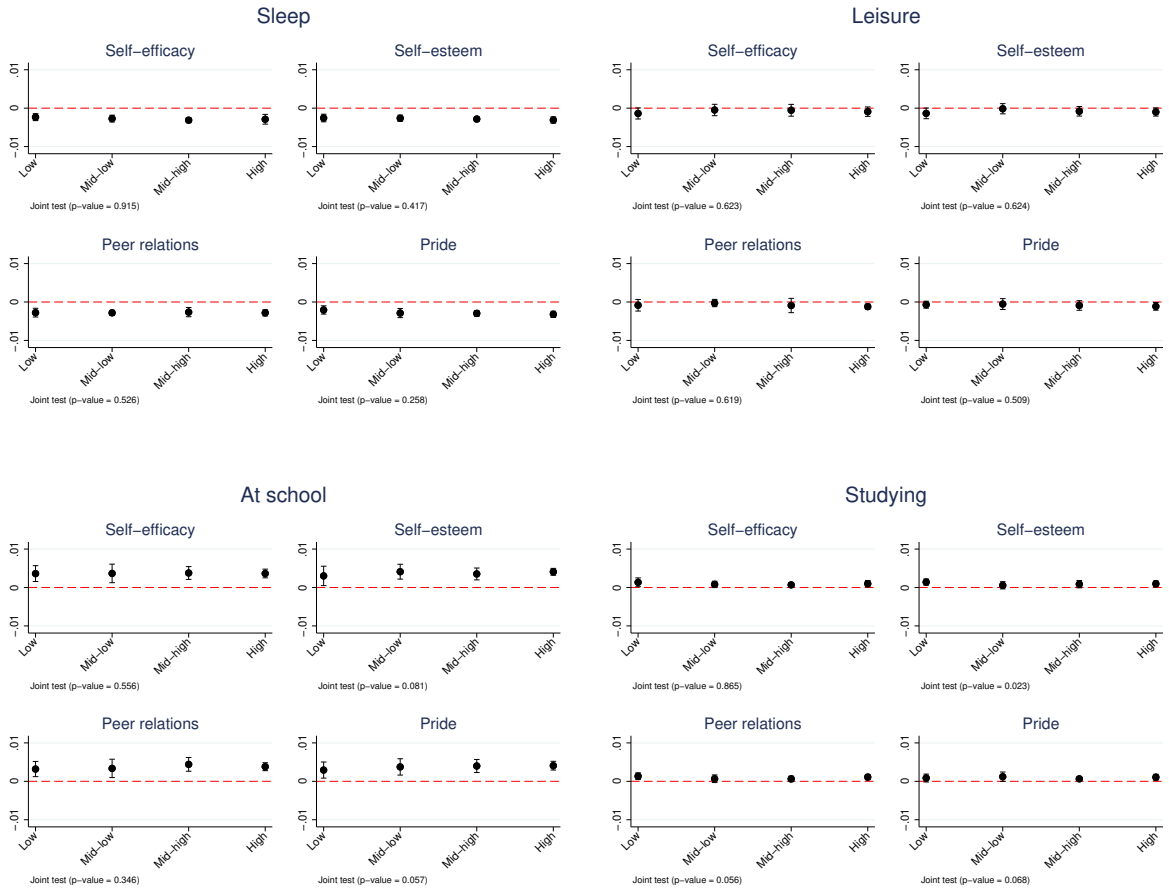
Additional margins of time use reinforce this interpretation. No statistically significant effects are found for time devoted to caring for others or domestic tasks, and there is no evidence of heterogeneity across quartiles along these dimensions. This indicates that the reform did not substantially alter adolescents' participation in household responsibilities, and that the primary behavioral adjustments occurred along schooling-related activities.

These findings are consistent with the evidence in Agüero et al. (2021), who show that JEC increased time spent at school and reduced time allocated to household chores, leisure, and sleep, while leaving time devoted to studying at home broadly unchanged. The results presented here align with this overall pattern of time reallocation. However, they add an important dimension by showing that these adjustments are broadly similar across the baseline distribution of socio-emotional skills. The evidence suggests that while JEC generated common shifts in daily routines, the socio-emotional consequences of these shifts depended on adolescents' initial positions in the skill distribution, rather than on differential changes in the quantity of time allocated to activities.

Figures 3.5–3.12 examine heterogeneity in the effects of JEC exposure across observable characteristics, including caregiver marital status, household wealth, community risk conditions (drug selling, drug consumption, and juvenile gangs), caregiver gender, child gender, and urban residence. Exploring heterogeneity along these dimensions is motivated by the empirical literature on extended school-day reforms, which shows that impacts often vary across socioeconomic environments, student characteristics, and local contexts, although without a consistent or uniform pattern across settings. Evidence from Latin America suggests that the effects of full-time schooling are heterogeneous and depend on context, implementation, and initial conditions (Quintão et al., 2024). In the Peruvian context, socioeconomic disparities in cognitive skills emerge early and persist throughout the schooling cycle, with family background accounting for a substantial share of variation in achievement (Ngoy et al., 2024), suggesting that responses to educational interventions are likely to differ systematically across students.

Consistent with this mixed evidence, the results presented here show limited systematic heterogeneity across observable characteristics. Joint tests reported in each panel generally fail to reject the null of equal effects, indicating that differences by household, demographic, or community characteristics are not statistically pronounced. This absence of statistical significance should be interpreted with caution. The

Figure 3.4: Adolescent Time Use by JEC Exposure and Baseline Socio-Emotional Quartiles



Notes: Each panel reports Difference-in-Differences estimates of the effect of departmental JEC exposure on adolescents' daily time allocation. The exposure variable is the share of public secondary schools operating under JEC (rescaled so that one unit corresponds to a 1 percentage-point increase). Outcomes are measured in share of hours per day and include sleep, leisure, time at school, and studying. Estimates are reported separately by baseline quartiles of socio-emotional skills (self-efficacy, self-esteem, peer relations, and pride). Dots represent point estimates and vertical lines denote 95% confidence intervals. All specifications include individual fixed effects and standard errors are clustered at the department level. The red dashed line indicates zero effect. P-values reported in each panel correspond to tests of equality of coefficients across baseline quartiles. *Source:* Young Lives Peru (Younger Cohort, Rounds 4–5) and Peru's Ministry of Education public administrative data.

empirical design already stratifies the sample by baseline quartiles of socio-emotional skills, and further partitioning by subgroup substantially reduces the effective sample size within each cell, leading to wider confidence intervals and lower statistical power.

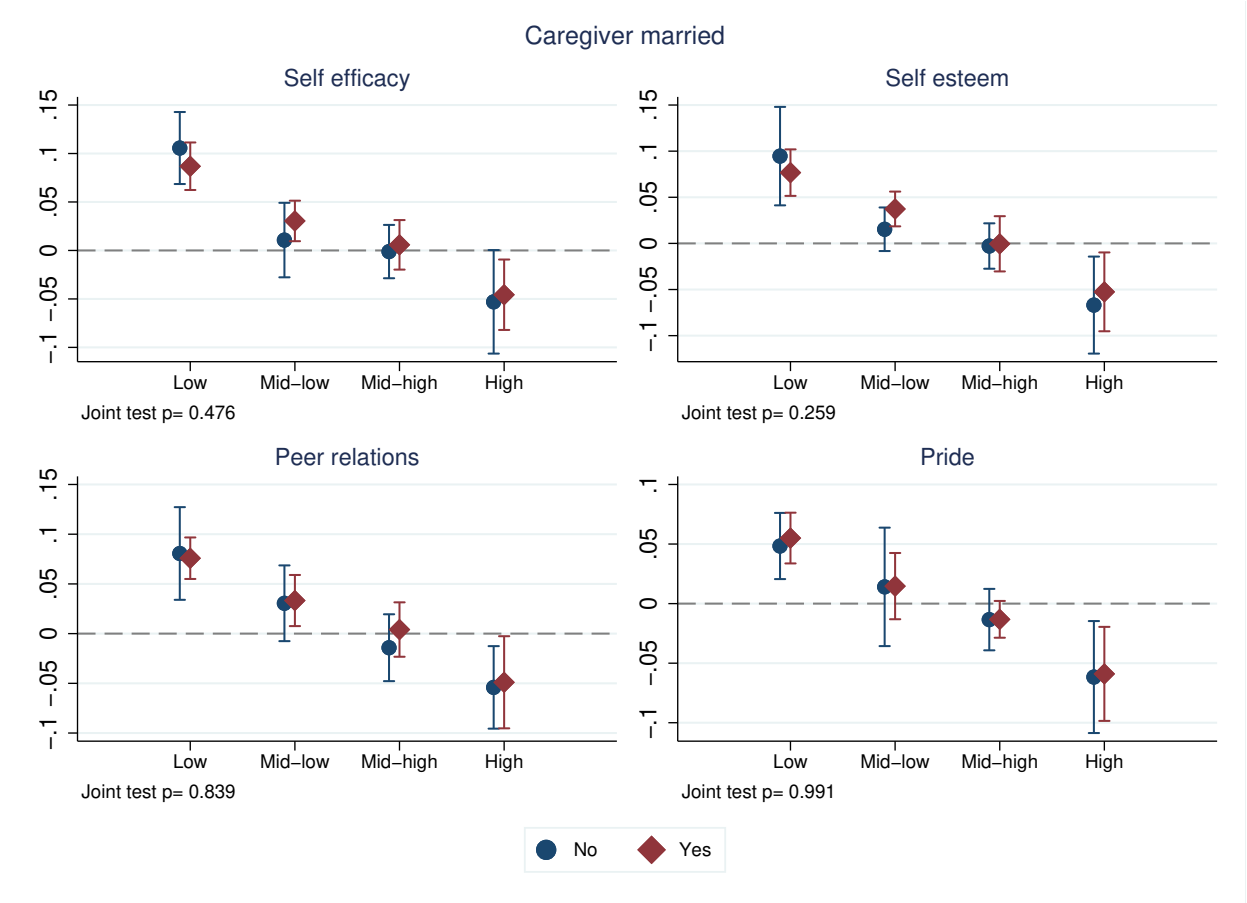
Despite this, a consistent pattern emerges across all specifications. Within virtually every subgroup, the same distributional gradient identified in the main results is preserved: positive effects for individuals in the lowest quartile, small or negligible effects in the middle of the distribution, and negative effects for those in the top quartile. This pattern holds across caregiver characteristics, gender, urban status, and community-level variables.

This finding contrasts with the broader empirical literature, where heterogeneity is typically observed along multiple dimensions without a dominant organizing factor. In this context, the results suggest that

baseline socio-emotional position is the primary dimension along which responses to the reform vary, dominating observable sources of heterogeneity. There are, nevertheless, some suggestive deviations. In more adverse environments, particularly communities with drug selling, estimated effects tend to be larger in magnitude at the lower end of the distribution, and joint tests reject equality of effects for some outcomes. This is consistent with evidence that structured school environments may be especially valuable in contexts with higher exposure to risk. Similarly, heterogeneity by household wealth reveals statistically significant differences in some domains, although these patterns are not consistent across outcomes.

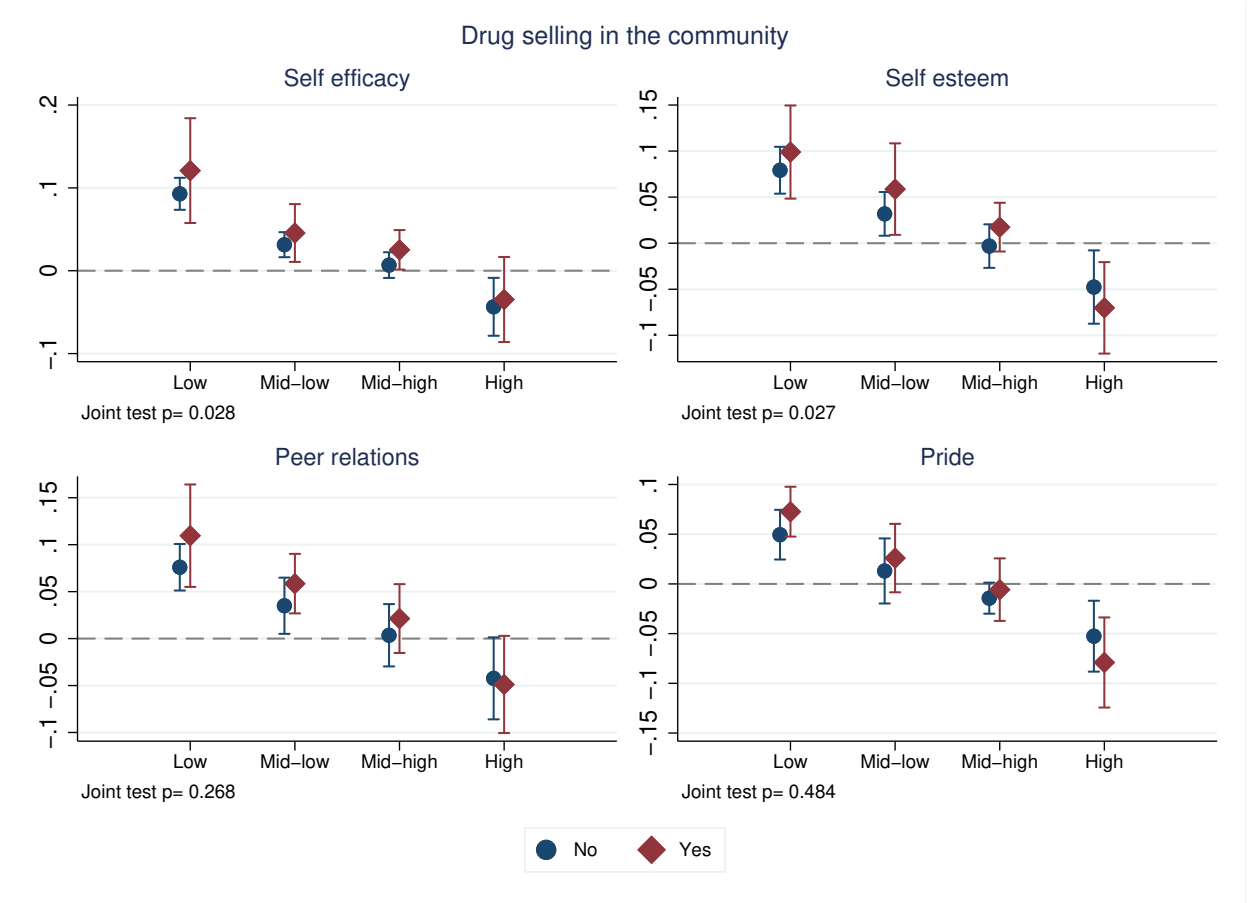
Overall, however, these deviations are not systematic. The central result is that once baseline socio-emotional conditions are accounted for, observable characteristics contribute relatively little to explaining heterogeneity in responses to the reform. These results suggest that individual initial endowments play a dominant role in mediating the effects of extended school-day policies, even in the presence of variation in household and community environments. This provides a more structured characterization of heterogeneity than the existing evidence, which typically documents context-specific differences without a clear unifying gradient.

Figure 3.5: Heterogeneity by Caregiver Marital Status



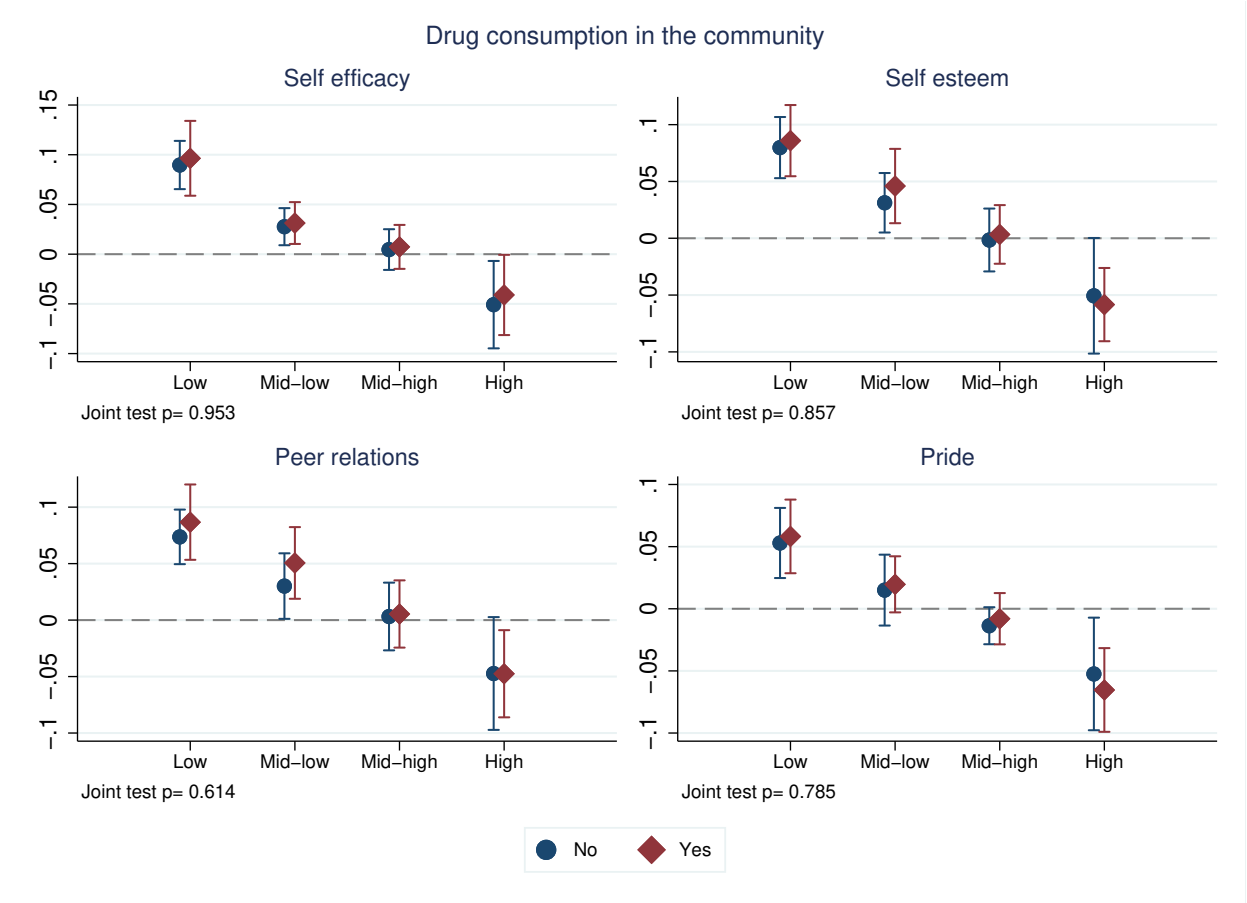
Notes: This plot reports Difference-in-Differences estimates of the effect of JEC exposure on the indicated outcome, separately by baseline quartile of the corresponding skill distribution and by subgroup. Dots represent point estimates and vertical lines denote 95% confidence intervals. Standard errors are clustered at the department level. The p-value reported in each panel corresponds to a joint test of equality of treatment effects across subgroup categories within baseline quartiles.*Source:* Young Lives Peru (Younger Cohort, Rounds 4–5) and Peru's Ministry of Education public administrative data.

Figure 3.6: Heterogeneity by Drug Selling in the Community



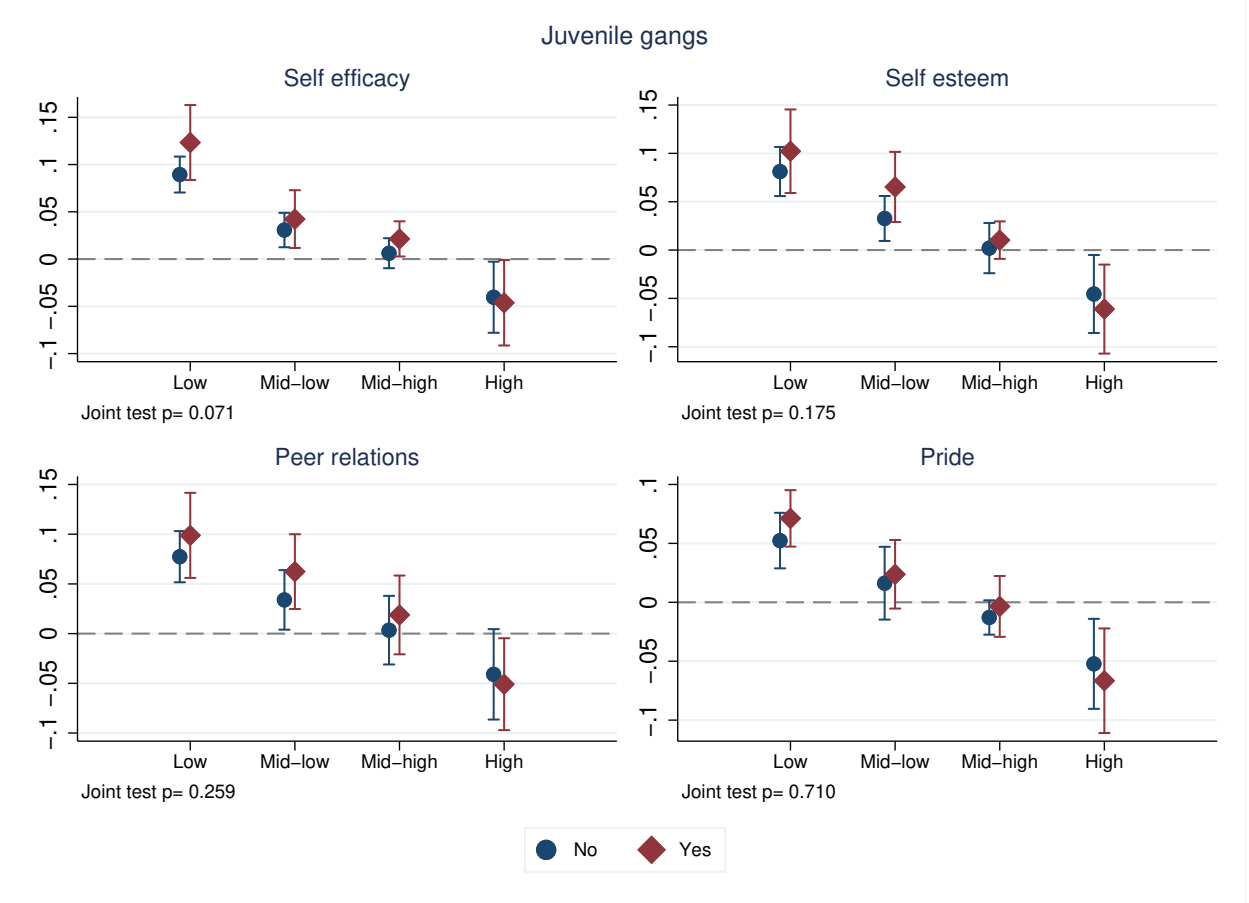
Notes: This plot reports Difference-in-Differences estimates of the effect of JEC exposure on the indicated outcome, separately by baseline quartile of the corresponding skill distribution and by subgroup. Dots represent point estimates and vertical lines denote 95% confidence intervals. Standard errors are clustered at the department level. The p-value reported in each panel corresponds to a joint test of equality of treatment effects across subgroup categories within baseline quartiles.*Source:* Young Lives Peru (Younger Cohort, Rounds 4–5) and Peru's Ministry of Education public administrative data.

Figure 3.7: Heterogeneity by Drug Consumption in the Community



Notes: This plot reports Difference-in-Differences estimates of the effect of JEC exposure on the indicated outcome, separately by baseline quartile of the corresponding skill distribution and by subgroup. Dots represent point estimates and vertical lines denote 95% confidence intervals. Standard errors are clustered at the department level. The p-value reported in each panel corresponds to a joint test of equality of treatment effects across subgroup categories within baseline quartiles.*Source:* Young Lives Peru (Younger Cohort, Rounds 4–5) and Peru's Ministry of Education public administrative data.

Figure 3.8: Heterogeneity by Juvenile Gangs in the Community

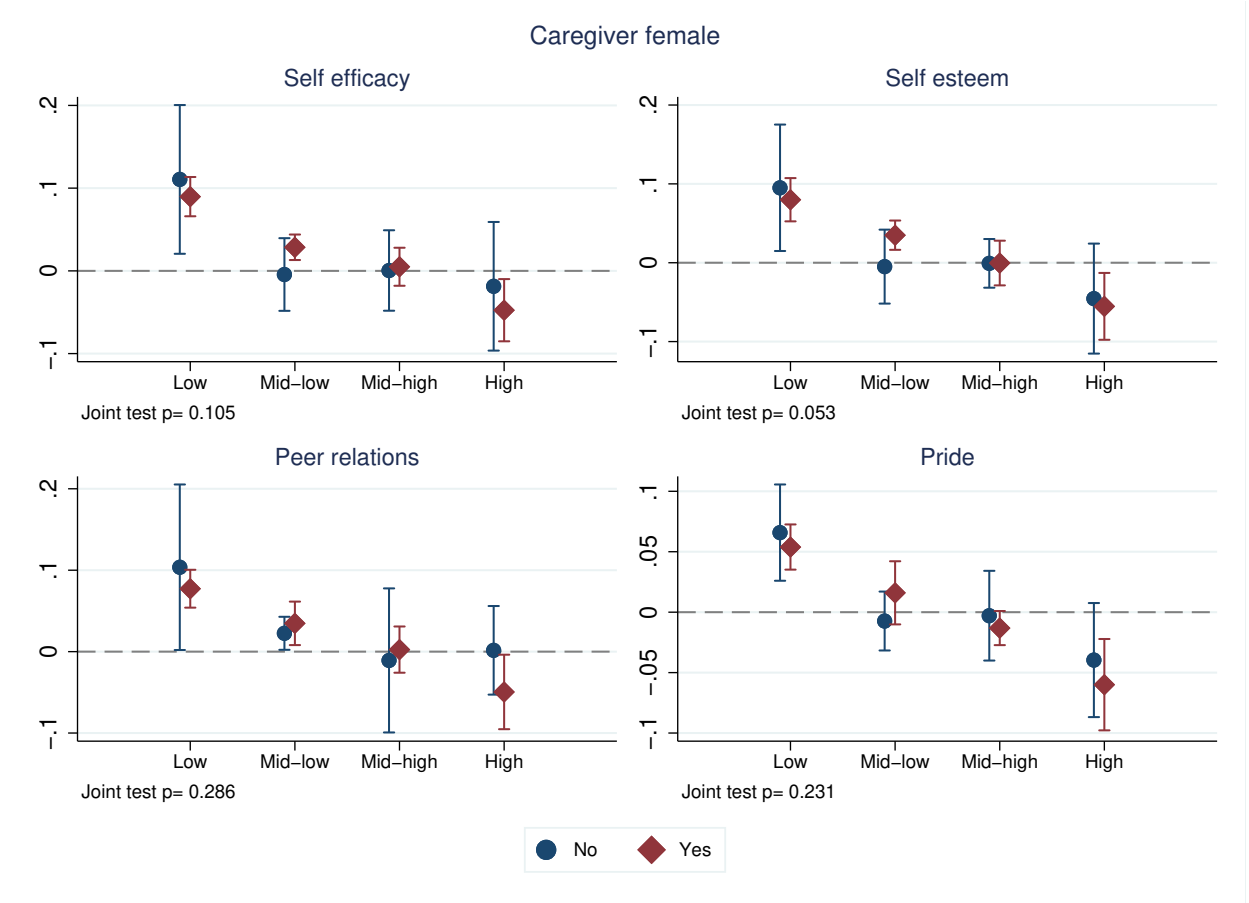


Notes: This plot reports Difference-in-Differences estimates of the effect of JEC exposure on the indicated outcome, separately by baseline quartile of the corresponding skill distribution and by subgroup. Dots represent point estimates and vertical lines denote 95% confidence intervals. Standard errors are clustered at the department level. The p-value reported in each panel corresponds to a joint test of equality of treatment effects across subgroup categories within baseline quartiles.*Source:* Young Lives Peru (Younger Cohort, Rounds 4–5) and Peru's Ministry of Education public administrative data.

Figure 3.9: Heterogeneity by Household Wealth

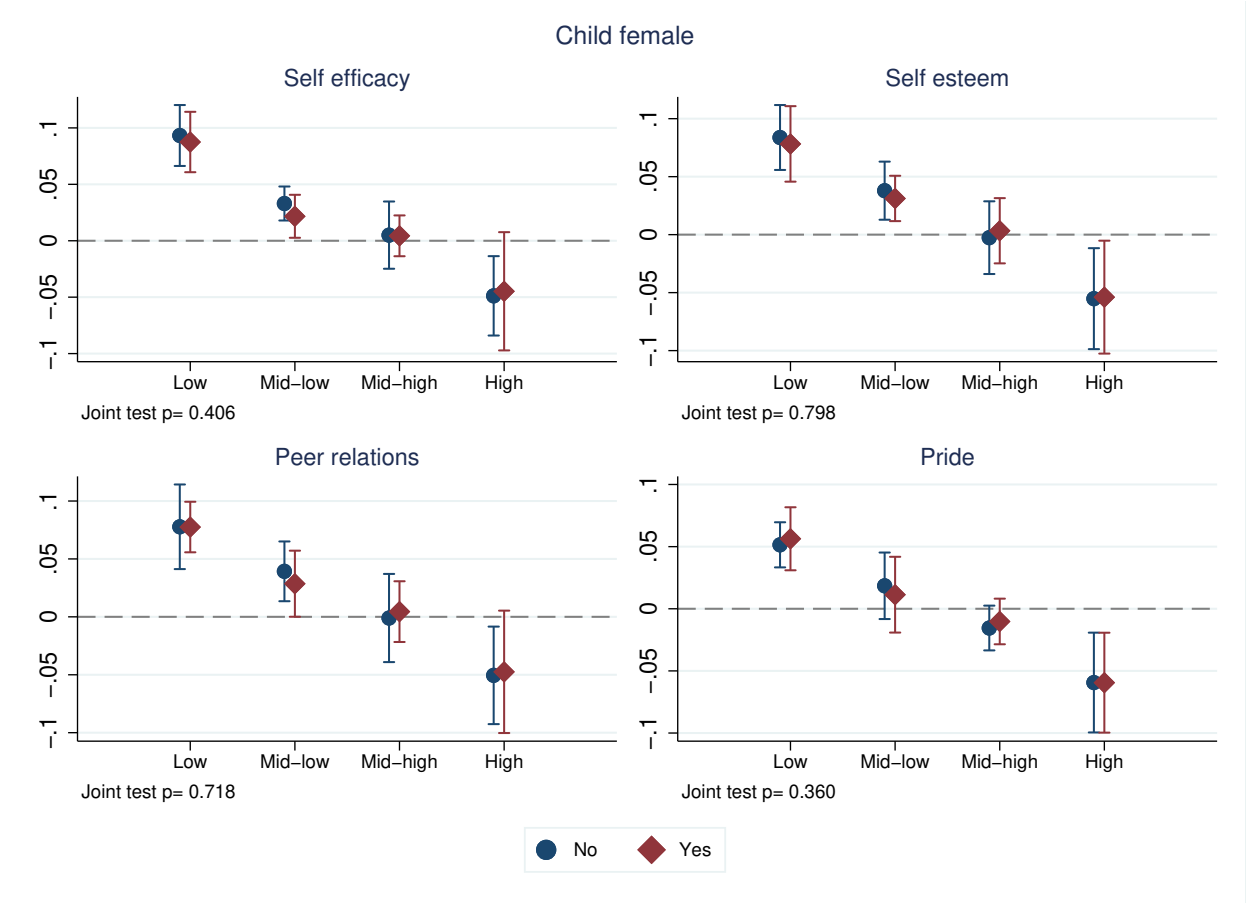
Notes: This plot reports Difference-in-Differences estimates of the effect of JEC exposure on the indicated outcome, separately by baseline quartile of the corresponding skill distribution and by subgroup. Dots represent point estimates and vertical lines denote 95% confidence intervals. Standard errors are clustered at the department level. The p-value reported in each panel corresponds to a joint test of equality of treatment effects across subgroup categories within baseline quartiles.*Source:* Young Lives Peru (Younger Cohort, Rounds 4–5) and Peru's Ministry of Education public administrative data.

Figure 3.10: Heterogeneity by Caregiver Gender



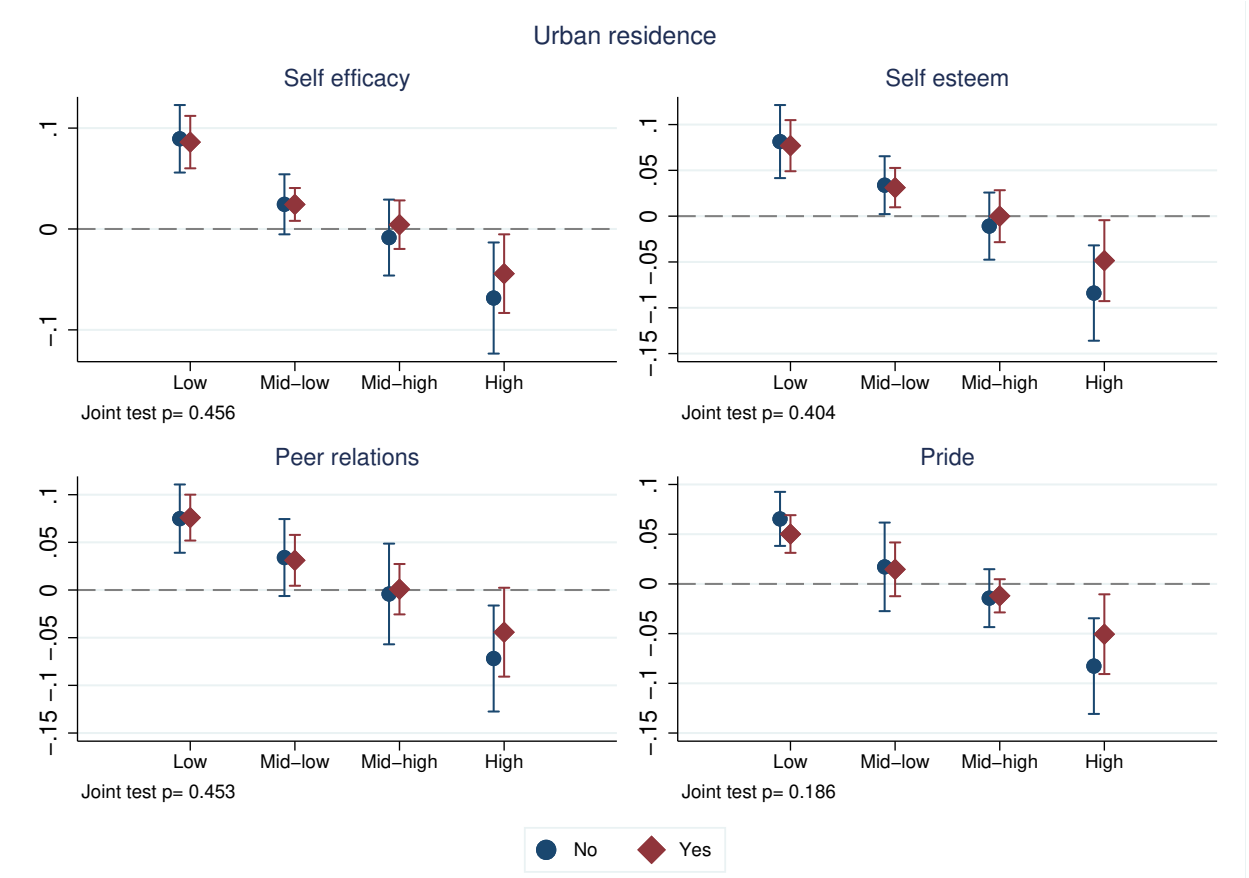
Notes: This plot reports Difference-in-Differences estimates of the effect of JEC exposure on the indicated outcome, separately by baseline quartile of the corresponding skill distribution and by subgroup. Dots represent point estimates and vertical lines denote 95% confidence intervals. Standard errors are clustered at the department level. The p-value reported in each panel corresponds to a joint test of equality of treatment effects across subgroup categories within baseline quartiles.*Source:* Young Lives Peru (Younger Cohort, Rounds 4–5) and Peru's Ministry of Education public administrative data.

Figure 3.11: Heterogeneity by Child Gender



Notes: This plot reports Difference-in-Differences estimates of the effect of JEC exposure on the indicated outcome, separately by baseline quartile of the corresponding skill distribution and by subgroup. Dots represent point estimates and vertical lines denote 95% confidence intervals. Standard errors are clustered at the department level. The p-value reported in each panel corresponds to a joint test of equality of treatment effects across subgroup categories within baseline quartiles.*Source:* Young Lives Peru (Younger Cohort, Rounds 4–5) and Peru's Ministry of Education public administrative data.

Figure 3.12: Heterogeneity by Urban Residence



Notes: This plot reports Difference-in-Differences estimates of the effect of JEC exposure on the indicated outcome, separately by baseline quartile of the corresponding skill distribution and by subgroup. Dots represent point estimates and vertical lines denote 95% confidence intervals. Standard errors are clustered at the department level. The p-value reported in each panel corresponds to a joint test of equality of treatment effects across subgroup categories within baseline quartiles.*Source:* Young Lives Peru (Younger Cohort, Rounds 4–5) and Peru's Ministry of Education public administrative data.

3.6 Conclusion

This chapter has examined how exposure to Peru's *Jornada Escolar Completa* (JEC) reform affects adolescents' socio-emotional and cognitive outcomes. Motivated by a literature that emphasizes both the context-dependent nature of instructional time and the importance of treatment effect heterogeneity, the analysis has focused on how the effects of extended school-day policies vary across the baseline distribution of socio-emotional skills.

The results show that the effects of the reform are not uniform. In the socio-emotional domain, a clear and systematic gradient emerges: exposure to JEC is associated with positive effects for adolescents in the lowest quartile of the baseline distribution and negative effects for those in the highest quartile, implying a compression of outcomes. In contrast, cognitive effects are smaller in magnitude and largely concentrated among initially low-performing students, with little evidence of comparable losses at the top. This divergence indicates that the short-run incidence of the reform operates more strongly through socio-emotional dimensions than through academic achievement.

Crucially, these results indicate that the effects of the reform are organized primarily by individuals' baseline position in the socio-emotional skill distribution. Rather than generating uniform gains or losses, the reform produces differential responses depending on where adolescents start: those at the bottom experience improvements, those in the middle show limited changes, and those at the top experience declines. In this sense, the impact of the reform is not a single effect, but a set of conditional responses that depend on initial endowments.

These findings speak directly to the central question raised earlier: whether extending instructional time improves outcomes, and for whom. While existing evidence has documented heterogeneous effects of extended school-day reforms across contexts and populations, the results presented here show that heterogeneity can follow a structured pattern along baseline skill distributions. In this setting, baseline socio-emotional endowments emerge as the primary dimension organizing responses to the reform, while observable characteristics such as gender, household background, or location play a more limited role.

The time-use evidence provides additional context for interpreting these results. The reform led to a reallocation of time toward school and study activities, consistent with its design, and these adjustments are broadly similar across baseline groups. The absence of strong heterogeneity in time allocation across baseline groups reinforces this interpretation: adolescents were exposed to similar changes in daily routines, yet their responses differed systematically depending on their initial position in the socio-emotional distribution. This is consistent with a framework in which the effects of extended school time depend on the interaction between new constraints and pre-existing endowments.

The results suggest that the consequences of extended school-day policies extend beyond instructional effectiveness and into the organization of adolescents' daily lives. By altering the allocation of time between school, home, and peer environments, such reforms can affect dimensions of development that are not immediately reflected in test scores. In particular, socio-emotional skills appear to be a central margin along which these policies operate during adolescence, a stage in which peer interactions, self-perceptions, and behavioral responses become increasingly relevant. Overall, the evidence suggests that extended school-day policies do not operate as uniform inputs, but as interventions whose effects are mediated by individuals' initial conditions.

From a policy perspective, these findings imply that evaluating extended school-day reforms solely through average academic gains may provide an incomplete picture of their effects. The distributional

incidence of the reform is central: the effects depend critically on where individuals are located in the baseline distribution, with gains among disadvantaged students coexisting with weaker or negative responses among those at the top. This suggests that complementary measures may be relevant during implementation, particularly to support adjustment to new routines. Interventions such as mentoring, counseling, or structured guidance on time use may help mitigate potential short-run costs while preserving the benefits for more vulnerable students.

Several limitations should be noted. First, the analysis relies on a departmental measure of exposure and therefore captures intention-to-treat effects rather than individual-level treatment. Second, the focus is on short-run outcomes during the early phase of implementation, when adjustment dynamics may be particularly salient. The persistence of the negative effects observed among high-performing adolescents cannot be assessed with the available data. Third, while time-use data document changes in daily routines, they do not capture the quality of activities or interactions, which may be important for understanding the underlying mechanisms.

Future research should examine whether the distributional patterns documented here persist over time as students, schools, and households adapt to the reform. Additional evidence on peer environments, school climate, and the content of time spent in school would help clarify the channels through which extended school-day policies affect socio-emotional development. More broadly, the results suggest that institutional changes in schooling can reshape inequality within cohorts in ways that are not captured by average effects, highlighting the importance of incorporating distributional perspectives into the evaluation of education policies.

3.7 Appendix

Table A.1: Socio-emotional constructs, items, and factor loadings

Factor	Dimension	Item (description)	Loading
F1	Self-efficacy	If someone opposes me, I can find ways to achieve what I want	0.349
F1	Self-efficacy	When I am confronted with a problem, I can usually find a solution	0.966
F1	Self-efficacy	If I am in trouble, I can usually think of a solution	1.142
F1	Self-efficacy	I am confident I can deal efficiently with unexpected events	0.880
F1	Self-efficacy	I can always manage to solve difficult problems if I try hard enough	1.471
F1	Self-efficacy	It is easy for me to stick to my aims and accomplish my goals	1.277
F1	Self-efficacy	I can remain calm when facing difficulties	1.478
F1	Self-efficacy	I can usually handle whatever comes my way	1.179
F1	Self-efficacy	Thanks to my resourcefulness, I know how to handle unforeseen situations	0.808
F1	Self-efficacy	I can solve most problems if I invest the necessary effort	1.544
F2	Self-esteem	I am as good as most other people	1.098
F2	Self-esteem	Overall, I have a lot to be proud of	1.215
F2	Self-esteem	I can do things as well as most people	1.365
F2	Self-esteem	Other people think I am a good person	1.308
F2	Self-esteem	A lot of things about me are good	1.686
F2	Self-esteem	When I do something, I do it well	1.382
F2	Self-esteem	In general, I like being the way I am	1.473
F2	Self-esteem	I do lots of important things	1.303
F3	Peer relations	I have lots of friends	1.917
F3	Peer relations	I make friends easily	1.077
F3	Peer relations	Other kids want me to be their friend	1.400
F3	Peer relations	I have more friends than most other kids	1.370
F3	Peer relations	I get along with other kids easily	1.631
F3	Peer relations	I am easy to like	1.513
F3	Peer relations	I am popular with kids of my own age	1.083
F3	Peer relations	Most other kids like me	1.553
F4	Pride	I am proud of my clothes	1.488
F4	Pride	I am proud of my shoes (or having shoes)	2.041

Notes: Loadings correspond to discrimination parameters from a GSEM graded response model with ordered logit link. All parameters are constrained to be equal across rounds. Higher values indicate greater item informativeness in measuring the latent construct. Source: Author's calculations based on Young Lives Peru data.

Figure A.1: Geographic distribution of JEC treatment intensity across departments

Notes: The figure maps the department-level treatment intensity variable, defined as the share of public secondary schools in each department that were incorporated into JEC in 2014. Darker shading indicates higher initial program penetration. The map is descriptive and illustrates the geographic dispersion of exposure used in the empirical analysis.

Table A.2: Distribution of JEC Treatment Intensity Across Departments

Statistic	Mean	Std. Dev.	Min	Max
Share of JEC schools (2014)	0.121	0.047	0.022	0.236
Selected percentiles				
10th percentile	0.072			
25th percentile	0.093			
50th percentile	0.104			
75th percentile	0.162			
90th percentile	0.216			

Notes: Treatment intensity is defined as the share of public secondary schools in each department that were selected into the JEC program in 2014. The numerator is based on the official list of participating schools (RM Nº 451-2014-MINEDU), while the denominator is obtained from the 2013 school census.

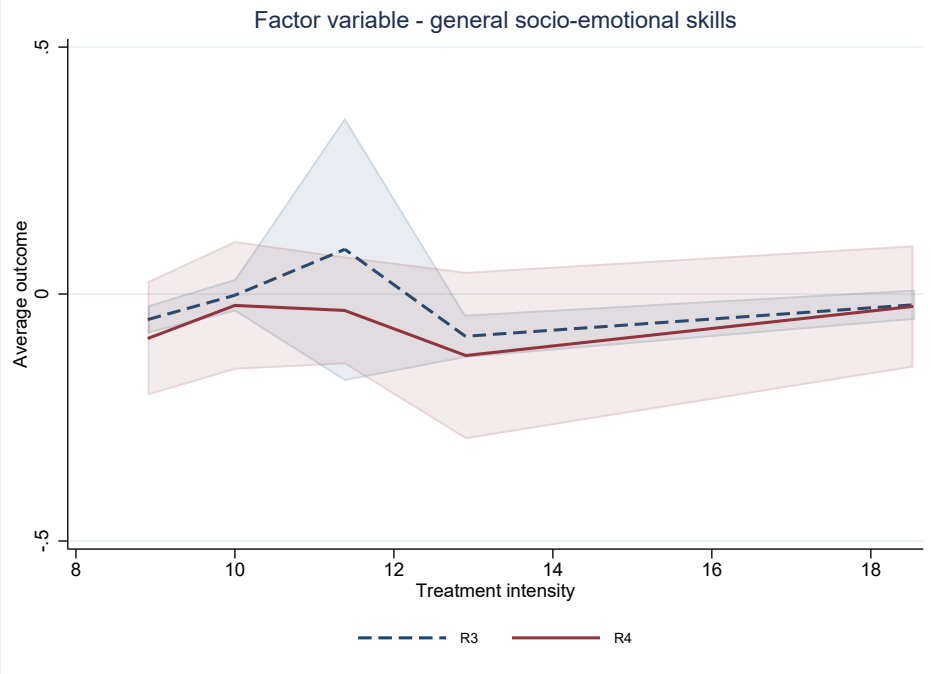


Figure A.2: Pre-reform relationship between outcomes and treatment intensity

Notes: The figure shows average socio-emotional outcomes across bins of treatment intensity for R3 and R4. Shaded areas represent 95% confidence intervals. This figure is descriptive and does not constitute a formal test of parallel trends.

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