Participation Strategies in Low-Resource Settings and Their Impact on Cognitive and Non-Cognitive Skills: A Study in Four Different Geographical Regions

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by

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Abstract

PARTICIPATION STRATEGIES IN LOW-RESOURCE SETTINGS AND THEIR IMPACT ON COGNITIVE AND NON-COGNITIVE SKILLS: A STUDY IN FOUR DIFFERENT GEOGRAPHICAL REGIONS

by

Magdalena Galazyn

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In a global 21st century, positive social, cultural, emotional youth development is crucial. Theories of human development suggest that development is complex, contextual, and multidimensional. Thus, with changing conditions worldwide, it is important to understand the effects of young people’s activities in challenging circumstances and how different factors promote or hinder optimal development. Research shows that education provides positive benefits to child and youth development (Phillips & Lowenstein, 2011), but many individuals do not have equal access to resources and opportunities such as public or private schooling (Woodhead, Frost, & James, 2013), and thus show poorer outcomes on cognitive tests, socio-emotional development, and self-esteem measures (Adams, 2011). Because not all youth have equal access to education, the purpose of this dissertation was to explore whether participation in social programs and/or work may provide at least some of the cognitive and other benefits offered by schooling. There were three primary aims of this dissertation: (1) to review three forms of youth participation (i.e., school, work, social programs); (2) to display any similarities or differences in participation by countries sampled in the Young Lives study (i.e., Ethiopia, India, Peru, Vietnam) (Barnett et al., 2012); (3) to understand the relationship between youth participation (i.e., school, work, social programs) and cognitive skills and non-cognitive skills. Using a large, longitudinal data set from Young Lives project (Barnett et al., 2012), several
research questions were addressed through secondary data analysis. Specifically, the third wave of data collected from all four countries involved (Ethiopia, India, Peru, and Vietnam) in the Young Lives (YL) was used. Hierarchical Linear Modeling was performed to examine whether participation in education, work, and/or youth programs had an impact on the development of cognitive (PPVT score, CLOZE score, Math score) and non-cognitive skills (i.e., Self-efficacy score, and Educational Aspirations, measured by asking the youth how far he/she hopes to get in educational terms). Findings from those statistical analyses indicate that there is a positive relationship between youth participation (i.e., education, social programs,) and cognitive and non-cognitive skills. Additionally, among youth in India, paid work had a positive impact on the self-efficacy score but was negatively associated with educational aspirations. Furthermore, youth in India who performed unpaid work scored lower on all cognitive measures. In Vietnam and India, there was a negative relationship found between unpaid work and self-efficacy score, such that those that performed unpaid work scored lower on the self-efficacy measure. Studying the lives of young people in settings that differ in resources and opportunities is important in gaining insight not only for specific adolescents but also for designing future interventions that promote positive youth development. Finally, how we define learning and under what conditions learning occurs needs to be reconsidered given the positive impact that participation in social programs had on cognitive and non-cognitive skills in the Young Lives sample.

**Keywords:** Education; youth participation; Young Lives; positive youth development
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CHAPTER 1

Children and Inequalities

In recent years, there has been an increase of global attention to the welfare of children (Boyden & Dercon, 2012; Armecin et al., 2006). Specifically, the focus has been on children’s development and wellbeing (Chowa, Ansong, & Masa, 2010). The interest stems, in part, from the U.N. Convention on the Rights of the Child, to support and protect all children (Mayo, 2001). To ensure their welfare, the U.N. established the Millennium Developmental Goals (MDGs), a list of high-priority goals that focus on ending poverty and hunger, providing universal education, forming gender equality, and making child health and maternal health a focus (Sachs & McArthur, 2005). While this list is not inclusive of challenges facing the world’s children, it does address some of the larger issues that currently plague the welfare of children living in poverty. By drawing attention to this topic, the U.N. and by proxy, the MDGs aimed to enhance the lives of children globally and to establish policies that might provide them with the necessities for developmental growth.

With the goal of improving the lives of children, especially the poorest, researchers have inquired into the factors that contribute to positive developmental growth. In attempting to provide some solutions, the focus of governments and non-governmental organizations (NGOs) has been to provide education for all children. With the agenda of making education a fundamental right, the longer-term and more transformational benefits are still to be seen (Walford, 2011). As an example, research shows that many individuals do not have equal access to resources and opportunities such as public or private schooling (Pells, 2011). This in turn may hinder young peoples’ positive development.
Research from the Young Lives Study shows that children from groups with low socio-economic status as well as from rural areas and the poorest households are at increased risk of having poor outcomes in education, health, and subjective well-being indicators (Pells, 2011). Due to the various inequalities that youth face in their daily lives and challenges of addressing these inequalities, scholars, practitioners, and policymakers have inquired into the factors that might buffer these circumstances. World Bank chief economist Nicholas Stern, states that investment in economic growth is not sufficient to mitigate poverty; rather, investment in health, education, and social protection that promote participation in decision-making may be key (Lanjouw & Stern, 1991).

Since not all youth have equal access to quality education, participation in social programs may provide at least some of the social and educational benefits of schooling. Participation in community organizations and religious activities may provide engagements that are more flexible and require fewer financial resources than formal schooling. While schooling may be the best option, does youth participation in social programs provide developmental benefits? Are such benefits measured in cognitive and non-cognitive outcomes that promise to offset the effects of poverty? In the next section, I expand on the importance of studying adolescents (from ages 10-19) and in particular their choices that might set the scene for adulthood.

**Importance of Studying Adolescents**

Adolescence is a critical time in multiple life domains. During the period of adolescence, young people are capable of reproduction, cognitive maturation, and can make decisions about their daily lives and futures. The World Health Organization identifies adolescence as the period of human growth and development that occurs after childhood and before adulthood, from ages
In the course of development, adolescents will encounter diverse experiences some allowing for choices and restricting others. Numerous opportunities and challenges will somehow shape young peoples’ futures (Wheaton & Clarke, 2003). During the period of adolescence, the opportunities and challenges will set the scene for possible participation and, in some cases, difficult life choices. Moreover, decisions made by adolescents may have a cumulative effect and impact subsequent occurrences in young adulthood (Young Lives, 2005).

Changes in biological functioning, maturation, and social environments transform youths’ interpersonal and intrapersonal understandings and outlooks on life. During a period when adolescents have to make critical decisions regarding their futures, young people develop sophisticated ways of thinking about themselves and others (Wheaton & Clarke, 2003). It is the time when adolescents begin to understand consequences of their right/wrong behaviors.

Adolescence is commonly considered a period of preparation for adulthood (Erickson, 1968; Roisman, Masten, Coatsworth & Tellegen, 2004). During adolescence, young people reach physical maturity and gain an understanding of their roles and their roles in relation to others (family, friends, and political figures). The developmental responsibilities of this period--coping with physical maturity, acquiring interpersonal skills, gaining necessary skills for adulthood, becoming emotionally and behaviorally autonomous, beginning to understand own self, and acquiring a set of values—are all related to a positive functioning in adulthood (Wheaton & Clarke, 2003). Thus, adolescence is a time of tremendous growth and potential (Roth, Brooks-Gunn, Murray & Foster, 1998). Additionally, healthy and optimal development is more than
avoidance of risky behavior (Lerner et al., 2005); instead, adolescence is a critical time when youth learn about themselves and others. Therefore, establishing contexts that promote social, emotional, behavioral and cognitive development is key for proper development (Catalano, Berglund, Ryan, Lonczak & Hawkins, 2004).

We expect young people to make critical decisions that will position them on the right path (Duncan & Raudenbush, 1999; Bronfenbrenner, 1989, 2005). Adolescence is a period of young people’s lives where they are granted freedom to make decisions. These choices to varying degrees include choosing academic courses, choosing their friends, activities, and making plans regarding their academic, vocational, and family endeavors. Many of the decisions taken by adolescents have implications for their later lives (Duncan & Raudenbush, 1999; Bronfenbrenner, 1989). For instance choosing to attend college may affect future career opportunities, ability to network, etc. On the other hand, becoming a young parent may limit future employment opportunities and put the family in financial crisis. Yet not all choices are available to young people growing up in low-income, poverty stricken, and unequal environments. For some, their future trajectories may be pre-determined due to lack of resources and opportunities.

Actions taken by adolescents influence the social environments they enter and the experiences they encounter, and these environments will consequently have an effect on their adulthood. Even short-term decisions may have consequences. For example, going out instead of studying, trying a drug, and being sexually active can all impact young people in a negative way. Other activities such as volunteering in an after-school program may introduce youth to mentors, new friends, and teach them responsibility and new skills that may serve beneficial in the future. The various paths that young people take are not independent of each other but rather
depend on the nature of the environmental, social, familial conditions in which they are
developing. Key contexts such as the challenges they face, in addition to and beyond family,
schools, peer groups, and neighborhoods help shape what adolescents will become.

Situations that adolescents encounter may promote or hinder their development.
Environments, cultures, social networks, and personal history, all influence adolescents’
decisions. Understanding how adolescents navigate toward well-being, self-determination, and
other values in their culture, such as economic independence and family life in settings that differ
in resources and opportunities, is important for gaining insight not only into this critical period
and for developing interventions that promote the various aspects of success that are needed in
adulthood.

In recent years, researchers have acknowledged that a holistic approach to studying
young lives is required, this would entail studying the daily lives of youth, schooling in
conjunction with labor, after school activities, childcare, and household responsibilities. In the
next section, a theoretical perspective that guided the literature review as well as the research
questions and data analysis are presented. I elaborate on major tenets of cultural, historical
activity theory to provide an understanding of how higher psychological functions such as
cognition arise through young peoples’ participation in context-embedded activities.

Cultural Historical Activity Theory - Principles of Positive Youth Development in the
Context of Young Lives

In a global 21st century, positive social, cultural, emotional youth development is crucial
to individuals and societies. Developmental psychology offers insight into the progression of
youth development by understanding developmental pathways and contextual influences on
behavior and well-being. Theories of human development suggest that development is complex,
contextual, and multidimensional. Thus, with changing conditions in communities, schools, and social activities, it is important to understand the influences and needs of youth and how different activities promote or hinder their needs for optimal development. Additionally, because not all young people have equal access to resources, it is essential to understand diverse activities that have a positive impact on youth’s overall wellbeing. Therefore, the goal is to move away from examining development in biological terms and focus on development that is complex, dynamic, and contextual (Schachter, 2005). How development occurs socially is of importance.

Cultural historical activity theory presumes individuals to be active and transformative agents situated in a cultural and historical context where development occurs through collaboration in goal-directed activity (Vygotsky, 1978). Thus, individual behaviors are no longer seen as isolated from the world but rather as changing socially in purposeful activities. Essentially, to understand the psychological mind and personality of an individual, the public life, and social context needs to be examined.

Individuals’ lives occur socially; therefore, more emphasis needs to be placed on the cultural and social contexts where development takes place. Affiliations and practices are the contexts where shared meaning is co-created and therefore require a detailed examination of the processes that are collectively shaped and experienced. Therefore, an individual’s knowledge and perceptions “depend on the embodiment, ecological context, social interactions, cultural knowledge and symbolic usage, and past experience in terms of conceptual organization and specific memory” (Nelson, 2007, p. 257). Integrating a cultural-historical perspective generates a substantial understanding of the youth experience as is mediated through social and cultural practices. The dynamics of knowing, feeling, and goal-making among people, groups, and institutions in specific places are the fundamentals to understanding development.
According to Leontiev (1981), development occurs in the dynamics of activity between the individual and the world. These activities may be performances, plays, speeches, and the like. Activities that are expressed through language and communication embody power roles, values, and motives and shape our perceptions and understandings of the world (Nelson, 2007). For example, in Ellen Cushman’s ethnography *The Struggle and the Tools* (1998), students used oral language to overcome daily struggles and negotiate with their institutions. In other words, students employ their language skills to discuss and solve a material problem (parking ticket) in a “resource scarce community” (Hull & Schultz, 2001) and meaningful civic and reflective activities in situations of dramatically changing socio-political environments (Daiute, 2010). Such research indicates, therefore, that individuals come together to participate and transform their physical spaces by using symbols and tools. Examples of symbols or tools that enrich development may be language, social organizations, and schools.

Unfortunately, certain settings and environments do not afford positive developmental outcomes. According to Heath (2000), there are limited environments where youths can engage and explore in meaning-making activities. Schools, in particular, may limit the amount of flexibility and creativity that enhance optimal development. Rather, school settings, have a routine schedule, rules, and an ideal depiction of a student, this can allow one to be a passive rather than an active participant in their learning experience. What type of spaces then, allow for optimization of opportunities? Despite growing evidence that participation in constructive leisure activities facilitates positive development, little developmental research focuses on transitional spaces. These spaces are camps, youth programs, heritage schools, and similar settings.
Understanding how individuals develop in the ever-changing world and what factors contribute to optimal development are important goals of contemporary research. Optimal cognitive and psychosocial development of adolescents is crucial as it shapes the pathways for adulthood. Life circumstances/contexts are largely responsible for shaping cognitive and psychosocial development. Unfortunately, certain environments do not afford positive developmental outcomes. Studying various settings and how they impact cognitive and non-cognitive skills is important because both cognitive and non-cognitive skills are associated with educational achievement and with occupational aspirations and outcomes (Adams, 2011; Brunello & Schlotter, 2010). More importantly, in developing cognitive and non-cognitive skills, young people become equipped to manage opportunities and constraints in their lives. In the next section, the importance of studying cognitive and non-cognitive skills will be discussed. Also, I will provide a review of various participation strategies and their regulation of cognitive and non-cognitive skills.

**An Overview of Cognitive and Non-Cognitive Skills**

Adolescence is a critical time when young people gain an understanding of the self in relation to the social world (Coleman & Hendry, 1990). Additionally, adolescence marks the beginning stages of complex thinking processes (also called formal logical operations) including abstract thinking, the ability to reason, and the ability to consider alternative points of view. These skills (i.e., cognitive and non-cognitive) foster social inclusion, promote economic productivity and well-being (Kautz, Heckman, Diris, Weel, & Borghans, 2015) and give young people the tools with which to flourish.

During adolescence (from ages 10 to 19), relationships with peers, family and society evolve. Adolescents begin to assert more autonomous control over their decisions, emotions and
actions. During this time, youth become increasingly aware of the perspectives of others such as their classmates, teachers, and societal norms (Berzonsky & Adams, 2003).

During adolescence, complex thinking processes including abstract thinking, the ability to reason, and the ability to consider alternative points of view develop. Higher-level thinking allows young people to think about and plan for the future, evaluate alternatives to problems and set personal goals (Keating, 1990). Thus, cognitive abilities may be considered to be the stepping-stone for broader functions like general cognition or intelligence. Although there are marked individual differences in cognitive development among youth, it is during adolescence that young people engage in complex decision-making that was previously beyond their mental capacity.

Cognitive abilities consist of multiple dimensions. Specifically, cognitive skills include fluid intelligence (the rate at which people learn) and crystallized intelligence (acquired knowledge). IQ tests, standardized achievement tests, and even grades are used as measures of “cognitive ability” or intelligence. Scores on IQ tests, standardized achievement tests, and grades have shown to be highly intercorrelated (Heckman & Kautz, 2012). For the purpose of this dissertation, standardized achievement tests assessing reading, language and math skills were used. Cognitive skills such as reading comprehension are significant features of cognitive development. Studies have shown that early success in reading skills may set a positive life-course trajectory, leading to good academic and psychosocial outcomes, whereas the opposite has been found for hindered reading skills (e.g., Butler, Marsh, Sheppard, & Sheppard, 1985; Senechal & LeFevre, 2002; Stainthorp & Hughes, 2004; Wagner et al., 1997). Simply put, youth who never learn how to read, write, or do simple arithmetic or show poorer performance will have limited opportunities as compared to their educated counterparts.
Non-cognitive skills refer to capacities, feelings, or traits of the individual, which are as important as cognitive processes (Borghans et al. 2008). Non-cognitive skills include motivation, agency, future aspiration, and self-efficacy among many others, and are crucial for school adjustment, academic achievement, school completion, further education and economic growth (Borghans, et al., 2008a; Carneiro et al., 2007; Dercon & Krishnan, 2009; Heckman et al., 2006; Heckman & Rubinstein, 2001). Additionally, non-cognitive skills support cognitive development and are associated with higher productivity (Rothstein, Jacobsen, & Wilder, 2008).

One of the non-cognitive skills of interest is self-efficacy, referring to an individual's belief in his or her ability to perform and accomplish a goal/task (Bandura, 1977, 1986, 1997). Self-efficacy reflects confidence in the ability to exert control over the situation at hand and plays a role in how one approaches goals, tasks, and challenges. For example, individuals with high self-efficacy may be more likely to overcome stressful situations since they practice the “I can do this” attitude, giving them the confidence and motivation to succeed (Azar, Vasudeva, & Abdollahi, 2006). On the contrary, individuals with low self-efficacy believe that tasks-at-hand are more complex and problematic than they are, creating self-doubt and anxiety. Negative thoughts and beliefs may hinder youth to think rationally about their situations creating insecurity and ultimately hindering their skills to solve problems efficiently (Pajares, 2002). Although self-efficacy skills are mostly considered to be related to psychological well-being and life satisfaction (Tong & Shanggui, 2004), they also have the ability to impact rational thinking.

Both cognitive and non-cognitive skills develop through interactions with parents, peers, and teachers and are fostered in formal school environments, but also through informal learning routes (i.e., work, social programs, etc.) and other life experiences. This dissertation research examined the relationship between youth participation in schooling, social programs and work as
they relate to cognitive and non-cognitive skills in four developing countries. Understanding what contexts impact cognitive and non-cognitive skills is crucial since a growing body of empirical research shows that cognitive and non-cognitive skills predict educational attainment, labor market success, health, and criminality (Kautz, 2014). The next section provides an overview of the three main participation strategies (i.e., school, work, youth programs) studied in this dissertation.

**Overview of Youth Participation**

**Education as a Participation Strategy**

The development of young people’s cognitive and non-cognitive skills occurs in various activities (e.g., schooling, tutoring, coaching, and the like.). One particular activity, which is well researched and contributes to positive youth development, is schooling. Historically, schooling has been associated with promoting cognitive abilities and expanding mental capacity. Schooling plays a leading role in the development of cognitive skills such as literacy and numeracy. These skills are the building blocks to more complex skills such as problem-solving abilities (Adams, 2011; Brunello & Schlotter, 2010).

Schooling teaches young people cognitive skills that ultimately lead to ‘positive youth development’ (Muedini, 2015). For example, schooling has been linked to readiness of life outcomes, including earnings, productivity, employment and well-being as well as the more direct outcomes of school retention, progression, and academic achievement (Blanden et al., 2006; Carneiro et al, 2007; Glewe, 2002; Heckman et al, 2006; Heckman & Mastero, 2007). Due to the various benefits of schooling, current policies attempting to improve access to formal education in developing countries have contributed to the growing number of youth populations being more likely enrolled and staying in school longer. However, with the increasing numbers
of youth being enrolled, issues regarding educational disparities have transpired. For example, research from Young Lives shows that youth with low social status, from rural areas and the poorest households are at increased risk of having poorer outcomes in education, health and subjective well-being indicators (Boyden & Dercon, 2012). Since not all adolescents have equal access to the same quality of education, we ask whether other forms of participation (i.e., social programs, work) provide some of the social and educational benefits afforded by schooling. These benefits may be the advancement of literacy skills, subjective wellbeing, and future aspirations.

Although one of the Millennium Developmental Goals is to advocate for equal access to education, in developing countries, children in poverty are less likely to attend school as compared to wealthier children (Filmer & Pritchett, 2001). Additionally, even when children have the resources to attend school, the type of schooling offered may not be equal. For example, while rapid growth in public education has led to greater accessibility for the disadvantaged, the quality of schooling received has suffered (Colclough, Kingdon, & Patrinos, 2009). Youth in poorer regions attend schools with rundown facilities, very few resources, and outdated curricula. Unfortunately, poverty restricts the opportunity for educational attainment, yet educational attainment is one of the most promising factors that make escaping poverty feasible.

Efforts aligned with the Millennium Development Goals have been successful in raising overall access to basic services but failed in eliminating the inequalities present between gender, income, and location (Stuckler, Basu, & McKee, 2010). Additionally, the limited accessibility and inadequate quality of schooling has led to a new movement of growth in private schooling. There are many advantages to private schools: superior curriculum and quality of education and
some schools even include English taught courses (Kingdon, 1996), which are not available in the government sector. Unfortunately with the cost of tuition and uniforms, the gaps between poor and non-poor are further widening (Akaguri, 2014). With the increase of private schooling, many have voiced concerns about equity, especially for those individuals who are already marginalized. Concerns have been raised regarding the accessibility and affordability of private schooling (Lewin, 2007; Rose, 2009).

Even with school enrollment being on the rise, the needs of disadvantaged groups and regions are not being met, which often leads to low attendance and high dropout rates (Galab et al., 2005; Hill & Chalaus, 2011). Skills gained through schooling may enable young people to enter the labor market, to enhance their productivity and to adapt to the rapidly changing demands of the economy (King & Palmer, 2006). However, in developing countries, young people are more likely to leave school with limited skills given the shortage of resources such as good quality teachers, curricula, and accessibility. Further, the same disadvantaged individuals may face greater competition in the labor market, a higher risk of unemployment or under-employment and economic hardship (Adams, 2007; Brewer, 2004).

Work as a Participation Strategy

In the least developed countries of the global south, it is more difficult for adults to access good and reliable jobs compared to the global north. With the lack of good quality jobs, family members lack the economic resources to care for their children. The situation in developing countries is further exacerbated when one or both parents are suffering from deadly illnesses. As a consequence of one of the parents not having a steady income or being physically ill, many young people find themselves heading households and taking on roles traditionally
assigned to adults. Taking on parents’ responsibilities, youth are forced to make critical
decisions on behalf of their families.

Work is a feature of how young people’s responsibilities expand and the opportunities or
setbacks that may transpire. For example, work may provide an active coping strategy for
poverty and may assist young people in learning useful (and marketable) skills. On the other
hand, the time youth spend working is the time they could be studying or interacting with their
peers. Recent debates have focused on the cost and benefits of child labor. For example, studies
have shown that youth laborers are less likely to finish school, have lower scores on tests, take
more sick days, and are more likely to be injured on the job causing them to miss additional days
of school (Heady, 2003). However, other studies, have pointed to the benefits of youth labor in
gaining various types of skills. While work undoubtedly can undermine schooling, this is not
guaranteed.

Children in developing countries tend to combine education with several kinds of work.
In Ethiopia, 52 % of children of primary school age in rural areas work and attend school
(Guarcello & Rosati, 2007). It is generally assumed that child labor is detrimental to youth’s
overall well-being; however, the effects may be twofold. On one hand the time that youth spend
working is the time that they could be doing homework or other activities. On the other hand,
there may be positive benefits to youth labor such as vocational training, learning by doing,
general workplace experience as well as networking and learning labor market strategies. Thus,
it may be that young laborers gain some human capital through work. Additionally, the money
that youth make can alleviate family pressures and help finance education that an individual may
not otherwise afford (Nieuwenhuys, 2005; Akabayashi &Psacharopoulos, 1999).
Additionally, Binder and Scrogin (1998) examined work duties of primary school children in Western Mexico. In particular, they looked at the relationship between labor force hours and leisure time. Findings suggest that the more time children spend working, the less time they had for themselves and their peers. Thus, work comes at the expense of playtime. While both labor force and households work hours do reduce social/individual investment hours, working children don’t seem to suffer relative to their non-working counterparts in reference to academic performance in this particular study (Kandel & Post, 2003). Although data are mixed regarding youth working and the impact it may have on their overall well-being, there is consensus that the more hours youth spend working, the fewer hours they have for school work, leisure time activities, or civic participation.

**Participation in Social Programs**

In response to the challenge of providing universal education, questions have been raised about the potential educational opportunities that may occur outside of the classroom and schools (Lewin, 2007; Rose, 2009; Tooley et al., 2007). Consensus is emerging about the importance of social relations and their impact on youth development. For example, studies looking at out-of-school participation that are academically and leisurely centered show benefits on outcomes related to positive social and moral development, such as communication skill and values. The expected outcomes for youth taking an active engagement in sports, narrative writing workshops, immigrant cultural programs, etc., include identity development, group membership and responsibility, initiative, peer and adult relationships, and skill development (Larson, et al., 2011, 2006, 2005). Additionally, there is a growing body of literature illustrating that when youth are given the opportunity to make decisions beneficial to organizations and their lives, they grow to become competent adults (Jarrett, Sullivan, Watkins, 2005).
Active and shared participation affects psychological wellbeing, including cognition, emotions, and behavioral development. It is through mutual collaboration that shared experiences among people are developed. There are several ways youth engage in their daily lives. Some of the engagements that youth partake in, are education, work, youth programs, churches, political groups and NGOs, to name a few. For the purpose of this dissertation, a synthesis of research on various forms of youth participation in social programs is presented.

In circumstances where youth face constant struggles, non-cognitive benefits may be as important as cognitive ones. In my review of the literature on positive youth development, I found a recurring point that social relations/activities provide opportunities and generate social networks (Jarrett, Sullivan, & Watkins, 2005). By participating in social programs, students create friendships and bonds with other members of the community. These relationships enhance their interpersonal skills and increase their social capital. Socialization of youth is a continuous and dynamic activity. For example, Suaroz-Orozco, Rhodes and Milburn (2009) found that when immigrant children who attended school and had a positive role model (i.e., coach) in their life, fared better and had better grades than their peers who shared similar life adversities.

In several studies described in this dissertation, the goal of youth programs is to empower children and provide a space where they engage in hands-on learning. Farmer (2008) researched the impact of ‘performance’ on young people in three youth development programs. The goal of the study was to focus on creating and studying environments that are ‘becoming’ and move away from studying development in a static fashion by looking at variables such as a community of place, ethnicity or interest. For example, in the process of performing as speakers, they become speakers. Findings related to the role of performance on youth in two after-school
programs, suggest that these programs offer a space for students to not only gain ownership of their present situations but also collectively with peers and leaders, to resolve problems that ultimately lead to change in thinking and being, as discussed by the author (Farmer, 2008).

Larson and Angus (2011) examined how youth in arts and leadership programs develop skills to achieve goals over time. Specifically, the authors wanted to understand the types of agency skills developed in youth programs, and what contribution do program advisors make to individual development. The authors explain that through the process of ‘doing’ and obtaining solutions to particular problems during the various activities, youth reported feeling empowered and confident that they can achieve and solve various obstacles.

Rahm and Ash (2006) explored how two informal educational contexts—an aquarium and an after school science program—provided a learning experience for ethnically and linguistically diverse youth from low-income backgrounds. Specifically, the study sought to understand what “doing science” means to the youth in these out-of-school learning environments. Research questions explored how informal educational contexts enabled the disenfranchised learner to adopt an identity as insiders to the world of science. Based on observations of two different settings, focusing on hands-on science activities and responses to interviews, the researchers claimed that development and learning occurred.

Performance based programs may be especially beneficial for youth who feel as if they have no voice in socio-political matters and therefore refrain from participation in any educational/political forums. By participating in a program that promotes creativity and inspires innovation by engaging in discursive dialogues, individuals may learn that they can become active producers of their environment and ultimately gain a stronger sense of self. As the authors
note, by relating to each other on shared issues and hurdles, these students might feel less isolated.

Youth programs working with immigrant populations also have reported positive outcomes. Shadduck-Hernandez (2006) studied undergraduate students’ participation in a series of Community Service Learning (CSL) courses offered through the Center for Immigrant and Refugee Community Leadership. The study examined a participatory photography project that connected immigrant students with local Vietnamese and Cambodian refugee youth. The author wanted to understand how immigrant and refugee undergraduate students made meaning of their roles as mentors with similar and familiar ethnic community youth and how the students understood their participation in the CSL model. Four major findings emerged as recurring themes during the two years of data analysis. Students developed critical perspectives on resisting and challenging the status quo through critical thinking and/or social activism (Shadduck-Hernandez, 2006).

Kegler et al., (2005) examined after school programs that utilized activities that are tailored to individuals with Asian cultural/ethnic backgrounds. The purpose of this project was to identify the needs of youth and the community that would potentially lead to program interventions. Based on the various needs of the community, the group organized cultural dances and formed after school volunteering services that consisted of teaching elders computer skills, conducting neighborhood drives, and teaching younger children how to read. Based on the data participation in this after school program strengthened communication with parents, established leadership skills, and constructed use of free time in a meaningful way. Additionally, the author’s reported that youth established a sense of future direction through support and guidance of a role model.
Others have implemented research programs to understand the specific nature of youth participation (Daiute, 2010; Cole, 1996). For example, Daiute (2010) implemented a research intervention with and in community-organizations (Bosnia, Croatia, Serbia, and U.S. refugee community) when exploring issues of political conflict and transition. To understand young people’s experiences as they are unfolding in a highly contentious time, youth were asked to participate in a writing activity comprised of three fictional story plots. Based on the prompted vignettes, youth were asked to narrate and resolve peer-to-peer conflict vs. individual with authority conflict. Youth who participated in community organizations offered more complex solutions involving collaborative systems than young people who did not participate in community organizations (Daiute, 2010).

The Fifth Dimension (5D), a program designed to help youth learn and develop literacy skills through an online computer curriculum (Cole, 1996) is usually run through a community organization that has a partnership with a local college or university. Youth are provided with tools (computers) to play and solve puzzles. Students of different ages are encouraged to ask questions and get help when needed from research assistants who are college students. According to the author, as the students work on solving problems in a multi-level game, which increases in the level of difficulty, students develop higher-level problem-solving skills. It is through working out and solving problems with the help of skilled helpers such as university students’, where optimal learning and development occurs (Cole, 1996).

The American youth policy forum (1999), after synthesizing 18 evaluations of effective programs, concluded that a common aspect among various programs was that youth not only received services, but provided them. Through participation, change occurred. Youth went from being participants to partners. Assessments of effective youth programs share a few things in
common: these programs provide the opportunity to develop self-efficacy, to contribute collaboratively and independently, to participate actively in real challenges, and to produce a recognizable end result (Catalano et al., 2004).

A detailed examination of how individuals engage in practices to mediate their involvements in public spaces is important to move theory to research in practice and in the contexts of young people’s lives (Daiute, 2010). Through this lens, one is postulating that learning and development are interconnected, embedded and evolving, and thus cannot be separated but only explored as a whole. Active participation in one’s own learning and growth and in society is fundamental to healthy development. For example, Fotenos & Rohatgi (2007) worked with a non-profit organization to pilot a workshop for youth in the slums. In this study, children participated in after school programs and were taught how to make videos to inform the public about their views and ideas on issues relevant to their communities. Rather than being passive observers to societal problems, the youth engaged in educating the general public about their perspectives of the problems presented and provided remedies to salvage them as well. (Fotenos & Rohatgi, 2007). From this perspective, engagement in youth programs does not only serve as having a socialization function but is also educational.

Across the few studies presented here, prevailing trends have been observed. Specifically, within these programs, young people are encouraged to be active rather than passive (Farmer, 2008), to work together and make decisions (Larson & Angus, 2011), and to relate to each other and adults in new ways (Kegler et al., 2005). In addition, within these programs and projects, young people are supported to take on a variety of roles and responsibilities (Catalano et al., 2004). Youth programs elicit learning by engaging the participants in meaningful activities such
as theatrical performances, art, team-solution building, and collaborating educational programs with the communities. The research presented highlights how individuals engage tools and practices to mediate their involvements in public spaces. Through this lens, one is postulating that learning and development are interconnected, embedded and evolving, and thus cannot be separated but only explored as a whole. Development then has an intentional relevance that is ingrained with human experience that holds culture, values, and motives (Stetsenko, 2008).

Despite growing evidence that participation in constructive leisure activities facilitates positive development, the practice of youth engagement is unfamiliar to many policymakers and local leaders (Zeldin, 2007). Furthermore, even less is known regarding the benefits of social programs in developing countries. Specifically, there are no studies with a large and cross-context sample that look at various types of participation. The most fundamental questions that often arise, include: what are the specific benefits of youth engagement to young people and communities? More importantly, what is the relationship between youth engagement and cognitive and non-cognitive skills? This dissertation addresses inquiries mentioned above by examining the nature of youth participation in four developing countries and how they relate to cognitive and non-cognitive skills using Young Lives data. The next section provides an overview of Young Lives and why I used their data to conduct secondary data analysis to answer my research questions.

**Toward Positive Youth Development**

As children grow older their responsibilities increasingly expand beyond the household and school (Ames, 2013; Tafere, 2013). As such, many of the transitions occurring during adolescence towards adulthood are shaped by wider social norms and expectations. Even though school remains a central component of youth’s lives, economic transitions towards livelihoods,
caring for family households, and preparation for social transitions into partnership and parenthood transpire.

Exploring contexts that nurture healthy development that shape social, emotional and cognitive development during the period of adolescence is vital for ‘positive youth development’. Positive youth development transpires through/by-

a. Environment rich in opportunities that supports learning of skills and building new interests.

b. Individuals as active products and producers of their environment and development.

c. Participation in collaborative and meaningful activities.

d. Tool use (language, mechanical tools, and social organizations, etc.) as an affordance to enrich development.

Thus, the definition of positive youth development tends to include or assume that it occurs in meaningful and collaborative contexts.

Despite growing evidence that participation in programs facilitates positive development, the role of participation in activities is unfamiliar to many policymakers and local leaders (Zeldin, 2003). Questions that often arise, the most basic: what are the benefits of youth engagement to young people and to communities? The argument presented is that youth active participation in social programs is vital for positive youth development and therefore should be researched in more detail. While education may have the most studied positive impact, other kinds of social participation could account for some positive effects in the absence of formal education.

Based on the literature presented above, social programs promote positive youth development. Thus, the goal of this dissertation was to answer three related questions: What is
the nature of young peoples’ participation (i.e., education, work, social programs), as captured in the Young Lives data? Does youth participation differ by country (Ethiopia, India, Peru, Vietnam)? And, how do the different types of participation (i.e. education, work, social programs) relate to cognitive and non-cognitive skills? To answer the above research questions, I will describe the Young Lives data for the present study and how I examined it.

**Studying Youths’ Participation Strategies as a Developmental, Contextual, Process Using Young Lives Data**

Because individuals developing life cannot be studied independently in isolation, more emphasis needs to be placed on the cultural and social contexts where development takes place. To date, there are few studies that use longitudinal data to investigate the effectiveness of youth programs and their impact on the youth themselves. Furthermore, many studies do not examine multiple dimensions of development, such as the physical, emotional, social, cognitive areas of life. The goal was to move away from examining development only in biological terms and focus on development that is complex, dynamic, and contextual (Schachter, 2005). How development occurs socially, was of importance.

Young Lives is an international, longitudinal study investigating the complex nature of childhood poverty in the ever-changing socio-political world (Boyden & Dercon, 2012). Besides researching the intricacies and complexities of human development as it unfolds in various contexts, Young Lives study provides time-sensitive information regarding exposure and risk. The significance of the Young Lives study is that it looks at the individual in terms of various domains and how these domains manifest and interact in real life. For example, the Young Lives project’s conceptual framework not only looks at the individual but also examines risk factors at the household and community level.
The Goals of Young Lives Study are to:

1. Provide a well-rounded understanding of the causes and consequences of childhood poverty and examine how policies affect children’s wellbeing.
2. Inform the development and implementation of future policies and practices that will reduce childhood poverty.

Consistent with theory that development is multidimensional (Rogoff, 2003; Mahn, 1999), research from the Young Lives study has focused on factors such as education, health, income, parental and community involvement, among many others, to understand how and when these factors have an effect on youth development (Boyden & Dercon, 2012). Adding to the research, this dissertation explored the effects of youth participation (i.e., school, social programs, and work) on youths’ cognitive (i.e., PPVT test score, Math test score, and CLOZE test score) and non-cognitive skills (i.e., Self-efficacy score, and Educational Aspirations, measured by asking the child how far she hopes to get in educational terms) during the adolescent years. Adolescents ranging from 14.5 -15.5 years were used for the analyses.
CHAPTER 2

Methods

Here I describe the methods used for the secondary data analysis from the Young Lives (YL) study in Vietnam and Andhra Pradesh state in South India, Peru, and Ethiopia. First, research questions with an illustrative model are presented. Second, sampling methods and the subsample that was used for secondary data analyses, along with survey and data collection procedures are summarized. Further, measurements used and the reliability and validity of these measures are discussed. Finally, I discuss the data analysis and statistical methods used.

Research Questions

Q1. What is the nature of young peoples’ participation (i.e., education, work, youth programs), as captured in the Young Lives Data?
   a. Does participation differ by country (Ethiopia, India, Peru, Vietnam)?

Q2. How does participation relate to cognitive and non-cognitive skills?

Hypotheses:

Q1. For all countries (Ethiopia, India, Peru, Vietnam), I expected youth to be active in all forms of participation (i.e., education, work, and youth programs). Since majority of the sample is considered to be poor as measured by the wealth index, it was expected that young people would need to balance work and education simultaneously. Additionally, because young people are juggling work and school, participation in social programs would be least endorsed/practiced.

Q2. Given the literature that cognitive and non-cognitive skills are fostered in both formal and informal settings, I expected to see a direct relationship between all forms of participation and cognitive and non-cognitive scores.
To address the research questions, a preliminary model applying Young Lives data and cohort sampling was constructed. As illustrated in Figure 1, my model posits that there is a relationship between all forms of participation on cognitive and non-cognitive skills.

Figure 1: Conceptual Model

The variables of interest are as follows: The main predictor variables are education, youth programs and work. Main outcome variables are cognitive and non-cognitive measures.

Because data were collected in 20 sentinel sites in each country, and since individuals in the same sentinel may share some common experiences but differ from one sentinel to the next, hierarchical linear modeling was performed. The HLM models treat participants as level-1 units and sentinel as level-2 units. All independent variables are measured at level-1.

**Young Lives Study Sampling**

YL is a study investigating childhood poverty in four countries – Peru, Vietnam, Ethiopia and Andhra Pradesh State (AP) of South India. Data include quantitative survey and participatory qualitative research on 12,000 children from low-income countries: Ethiopia, India, Peru, and Vietnam. Household, child and community data were collected including but
not limited to children’s material and social circumstances, environmental and social conditions, and psychosocial wellbeing of families and youth.

Data have been collected over a 15-year period and include two different cohorts. Two thousand children sampled ranged in age from 6 months to 17.9 months at enrollment and are referred to as ‘1-year-olds’. The older sample consists of 1000 children ranging in age from 7.5 years to 8.5 years, known as ‘8-year-olds’. Currently, there are five-time points of data collection: 2002, 2006-07, 2009, 2013 and 2016. The final data collection will take place in 2016. For the purpose of this dissertation and the nature of the research questions, data collected from the older cohort during the third-wave of data collection (2009) were analyzed when the adolescents are 15-years-old. Both, academic institutions and non-governmental organizations have worked in collaboration in all four countries during all the stages of the study. Funding for the Young Lives comes from the UK’s Department for International Development (DFID). Information on the rationale and aims for the study can be found on the YL website: http://www.younglives.org.uk.

For the data collection, a detailed protocol was developed and used in all YL countries. The goal was to understand what happens to children who grow up in poverty in the millennium. Requirements for the recruitment process were to over-sample the ‘poor’ and cover both urban and rural areas. To achieve the goal of reaching poor families, the project team consulted in-country experts to define the regions and specific sites. Sites were ranked by poverty level: poor, average, better off and rich. Criteria used for ranking wealth status included: development of infrastructure, percentage of poor households in the commune, and child malnutrition status. Country-specific differences, such as the poverty ranking of sites that contributed to their selection, have been documented in the Preliminary National Reports and are available on the
Young Lives website. Other criteria used in the selection process were: represent common provincial/regional features, commitment from the local government to perform the research, feasibility conditions and accessibility logistics to conduct the research.

Random sampling was used in the selection of households for the participation in the study. Households were selected within a sample of ‘communities’ in a particular site. In all the countries a door-to-door screening survey was conducted. From all the eligible children screened a simple random sampling was applied to select 100 1-year-olds and 50 8-year-olds in each site, totaling a sample of 2000 children in the younger cohort (1-year-olds) and 1000 children in the older cohort (8-year-olds). There was a less than 2% of refusal to participate among the caregivers. To account for the refusal to participate, replacement sampling was used. More information on study design and sampling methods has been published in YL working paper (Wilson & Huttly, 2003) and Round 3 Survey Reports (for Ethiopia see Woldehanna, Gudisa, Tafere, & Pankhurst, 2011; for Peru see, Cueto, Escobal, Penny, & Amer, 2011; Vietnam see Duc, Thang, Tien, Hang, & Thuy, 2011; India see Galab, Kumar, Reddy, Singh, & Vennam, 2011).

**Subsample Used for Analyses**

The data from AP, Vietnam, Ethiopia and Peru was used for analysis in this dissertation because they provide contrasting as well as similar contexts. For example, all countries that were selected to participate in the research represent major regions of the developing world, are both low- and middle-income countries, and represent diverse socio-economic, political, and historical systems. The third wave of data collection of older cohort adolescents ranging from 14-15 years was used for the analyses. Because adolescence is a pivotal time when young people have to make critical decisions in regards to their futures and their families it was
interesting to see what choices serve them to their greatest potential.

**Survey and Data Collection**

The YL study survey data included child welfare indicators (Please see list below). Data on the households and communities were also collected. Additional information on the development of the questionnaires can be found on the Young Lives website. Data were collected during the interview process. The youth were asked to supply information about each household member, including education, name, gender as well as perceptions of well-being, social capital, school and work, health, literacy, numeracy and child development questionnaires. All youth that participated in the study assented and answered the above-mentioned questionnaires. If there were missing/unknown information by the respondent, the field investigator would ask if anyone else in the household knew the answer. Failing to respond or not knowing the answer to a question led the investigator to enter “9 NK” (no knowledge).

For each country, questionnaires were translated from English into the local language and the interviews were conducted in the local language. Before beginning the study, an informed consent was obtained. Any ambiguities in the meaning of questions led to revisions in the questionnaires, training modules, and manuals. Study investigators and supervisors for the study all received 2-3 weeks of training. The trainers used a common manual developed by the Young Lives team during the training sessions and based on needs; changes were adapted according to each country. Completed questionnaires were checked on site. For any errors present during data collection, a repeated visit to the household was made to obtain the proper information. Details about the fieldwork are discussed elsewhere (Penny, Ore, & Madrid, 2012).
Measurement of Variables Used for Analyses

Included in this section is a list of the independent and dependent variables used for the analyses. Additionally, description of how these variables were measured and coded for the final analyses is provided. Finally, reliability and validity statistics are presented for the outcome variables (i.e., cognitive and non-cognitive measures).

Procedures for Administering Surveys and Cognitive Measures

The main predictor variables include all the participation strategies of interest- schooling, work, and social programs. Surveys were distributed to Young Lives youth where they were asked the following fill-in-the-blank questions (see below). All responses were self-reported. For the cognitive measures, procedures were aimed at standardizing the administration across all sites. A detailed manual with instructions was prepared and all field workers were trained in the use of the various cognitive instruments. The cognitive tests (i.e., PPVT, CLOZE test, and Math test) were administered in a space at home that was quiet. Youth were given instructions with examples in order to achieve maximum comprehension. If youth were not able to grasp the instructions or the tasks, the test was not administered.

Method of Selection

As children grow older their experiences and responsibilities widen. Young Lives project provides an extensive exploration of individuals from various domains and how these domains interact, affect, and prosper in real life. I wanted to explore what young people do as measured through their daily participation. Schooling, youth labor, and social participation were the variables of interest since they usually encompass youths’ daily routines in western cultures. Because Young Lives study goals are to understand the causes of childhood poverty, the goal of this dissertation study was to contribute to the overarching question by understanding how youth
participation relates to cognitive and non-cognitive measures. Cognitive and non-cognitive measures chosen have been researched widely and predict labor market success, health outcomes, and life satisfaction which are all important contributing factors in breaking the cycle of poverty.

Three forms of youth participation were selected that were available in the household questionnaire. Additionally, cognitive and non-cognitive measures were also available in the same questionnaire packet. Only the variables of interest were extracted from a large body of data and used for final analyses in SPPS.

**Variables Used for Analyses**

**The main predictor variables.**

*Education.*

Q. Are you currently in school? (Yes/No Question)

*Social Programs.*

Q. Are you a member of any social program? (Yes/No Question)

*Unpaid Work.*

Q. On a typical day hours spent - doing domestic tasks?

Q. On a typical day hours spent in - tasks on family farm, cattle herding, other family business shepherding, piecework or handicrafts done at home?

*Paid Work.*

Q. On a typical day hours spent in - activities for pay or for money outside of household or for someone not in the household?

For the purpose of this dissertation, work variable was split into two categories, identified as ‘paid’ and ‘unpaid’. ‘Paid work’ variable included the responses to the question about hours
spent in activities for pay. ‘Unpaid work’ included responses to two of the questions - hours spent on a typical day doing domestic tasks and tasks on family farm, etc. All responses were recoded into binary variables. A score of 0 was assigned for anyone who has reported working zero hours and 1 for anyone reporting working more than zero hours. If anyone reported working more than 0 hours to either of the two questions or both in the unpaid work category a score of 1 was assigned to that individual. All independent variables were coded dichotomously. For the school enrollment and participation in social programs variables, 0 = No and 1 = Yes.

The main outcome variables consisted of both cognitive and psychosocial measures. For cognitive skills, the PPVT test score was used measuring vocabulary skills, math score, and a reading comprehension measured by the CLOZE test. For psychosocial abilities, self-efficacy measure and educational aspirations question was used.

**The main outcome variables – cognitive skills.**

**Peabody Picture Vocabulary Test (PPVT) test score.** Test of receptive vocabulary and was intended to provide a quick estimate of verbal ability and scholastic aptitude. For the purpose of this dissertation, version III was used (204 items; Dunn et al. 1997) in Ethiopia, India and Vietnam. The Spanish version PPVT-R was used (125 items) adapted for Latin America (Dunn et al. 1986). Previous researchers have found positive correlations with PPVT and other intelligence measures such the Wechsler and the McCarthy Scales (e.g. Campbell et al. 2001; Gray et al. 1999; Campbell,1998).

The test was individually administered and orally administered, and untimed. The task of the test taker was to select the picture that best represents the meaning of a stimulus word presented orally by the examiner. All items in the test were not expected to be administered. Instead, the fieldworker had to administer enough items to establish a
ceiling and a baseline. For the Spanish version of the PPVT-R, the baseline is formed by the highest eight consecutive correct responses, and the ceiling is formed by the lowest eight consecutive responses containing six errors. In the case of the PPVT-III, the basal set rule is one error, or no errors, in a set of 12 items, and the ceiling set rule is eight or more errors in a set. Non-administered items below the baseline (basal set rule) were automatically given a score of 1, given that they are expected to be easier, while items above the ceiling (ceiling set rule) were given a score of 0, given that they are more difficult. The raw score was formed by all the items given a score of 1 (i.e. answered correctly or below the basal item).

**Math test score.** Items from international testing programs were used. Additional new items were developed that are commonly used to assess mathematic skills. The test used, was divided into two sections. First section included 20 items dealing with addition, subtraction, multiplication, division and square roots, using both whole numbers and fractions. For this particular section, children were allowed eight minutes to complete the test. Section 2 contained 10 items on math problems. Items used for this particular section were items that were publicly available from Trends in International Mathematics and Science Study (TIMSS) and The Program for International Student Assessment (PISA). These items measured data interpretation, number problem solving, measurement, and basic knowledge of geometry. This was the only math section that included both open responses and multiple-choice items. The time allowed for this section was 10 minutes. The total score for children in mathematics was obtained from adding the correct responses. Children were not allowed to use calculators or any other help for any of the math tests.
CLOZE test score. This test is a measure of reading comprehension. Participants were asked to replace the missing words from a portion of text. Cloze test requires the ability to understand the context and content as well as the vocabulary in order to identify the appropriate word or type of words in the deleted passages of a text. Twenty-four items with increasing difficulty were presented to each child. Each child had 10 minutes to complete the test. The total score was the correct number of responses provided by the child. As with the other verbal tests, there was a translation and adaptation process for each relevant local language.

The main outcome variables – non-cognitive skills.

Self-efficacy score. Self-efficacy was assessed with the following five questions: “If I try hard I can improve my situation in life,” “Other people in my family make all the decisions about how I spend my time,” “I like to make plans for my future studies and work,” “I have choice about the work I do,” and “If I study hard at school I will be rewarded by a better job in the future.” The self-efficacy index is the average score of these items.

Educational aspirations. Youth were asked, “If you could study for as long as you liked what level of formal education would you like to complete?” (i.e., the level of education the child would likely achieve if not for barriers). ‘Educational aspirations’ is a continuous variable with scores ranging from 0 - 20 (0 = none; 13= post-secondary; 14 and above reflects years of university degree) with the exception of Ethiopia where the maximum score was 30. A score of 28 = adult literacy, 29 = religious education, and 30 = other. Because these values (i.e., 28,29,30) did not follow a hierarchy order (2 is great than 1) they were deleted (n = 7) from the analyses.
Additional Variables of Interest

Review of the literature on the transition into adulthood highlights the importance of including gender, socioeconomic status (as defined by the wealth index), and geographical location in order to understand development from a multifaceted perspective (Sherrod, Haggerty, & Featherman, 1993; Shanahan, 2000). To capture development in adolescents, attention was given to the diversity of subgroup experiences. For example, understanding the experiences of boys versus girls in Vietnam with respect to cognitive and non-cognitive skills was of importance and has future implications when developing policies. It was important to understand development as it unfolds among genders, socioeconomic classes, and geographical locations, contextually.

Socioeconomic status (as defined by the wealth index), gender, and geographical location where one resides, impact how adolescents view and make meaning of their experiences, specifically when transitioning into adulthood. For example, it may be that boys are more likely to attend and finish primary education thus affording better opportunities, whereas girls are expected to stay at home and take care of the household, limiting their future prospects. It was crucial to understand the various developmental pathways within each of the countries as they may produce both oppression and opportunity. This dissertation looked at subgroup experiences and how they relate to youths’ cognitive and non-cognitive skills. The subgroup variables used were the type of site (rural vs. urban), gender, and wealth index. Type of site is coded 0 = Rural and 1 = Urban. Gender is coded 0 = Female and 1 = Male. Wealth index is a continuous variable and was grand-mean centered prior to analyses.

Gender.

Q. Is the child male or female?
**Type Site.**

Q. Is the town urban/rural?

**Wealth index** is composed of three sub-indexes: (i) *housing quality index* (hq), (ii) *access to services index* (sv), and (iii) *ownership of consumer durables* (cd), all of which have equal weights in the estimation of the wealth index. Wealth index of household was defined as:

\[ W_{i} = \frac{\text{hq} + \text{sv} + \text{cd}}{3} \]

*Housing quality index:* is the simple average of the following indicators:

- Crowding (scaled sleeping rooms per person)
- Main material of walls - dummy variable that takes the value of 1 if main material of walls satisfied basic norms of quality
- Main material of roof
- Main material of floor

*Access to services:* simple average of the following indicators:

- Access to electricity
- Access to safe drinking water
- Access to sanitation
- Access to adequate fuels for cooking

*Consumer durables:* simple average of a set of dummy variables which take the value of 1 if a household member owns at least one of each consumer durable. The following table shows the lists of common consumer durables used in each country:
Table 1: Common Consumer Durables in each Country

<table>
<thead>
<tr>
<th>Ethiopia</th>
<th>India</th>
<th>Peru</th>
<th>Vietnam</th>
</tr>
</thead>
<tbody>
<tr>
<td>Radio</td>
<td>Radio</td>
<td>Radio</td>
<td>Radio</td>
</tr>
<tr>
<td>Television</td>
<td>Television</td>
<td>Television</td>
<td>Television</td>
</tr>
<tr>
<td>Bicycle</td>
<td>Bicycle</td>
<td>Bicycle</td>
<td>Bicycle</td>
</tr>
<tr>
<td>Motorbike</td>
<td>Motorbike</td>
<td>Motorbike</td>
<td>Motorbike</td>
</tr>
<tr>
<td>Automobile</td>
<td>Automobile</td>
<td>Automobile</td>
<td>Automobile</td>
</tr>
<tr>
<td>Landline phone</td>
<td>Landline phone</td>
<td>Landline phone</td>
<td>Landline phone</td>
</tr>
<tr>
<td>Mobile phone</td>
<td>Mobile phone</td>
<td>Mobile phone</td>
<td>Mobile phone</td>
</tr>
<tr>
<td>Table and chair</td>
<td>Refrigerator</td>
<td>Refrigerator</td>
<td>Refrigerator</td>
</tr>
<tr>
<td>Sofa</td>
<td>Fan</td>
<td>Stove</td>
<td>Fan</td>
</tr>
<tr>
<td>Bedstead</td>
<td>Blender</td>
<td>Iron</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Record Player</td>
<td></td>
</tr>
</tbody>
</table>

**Reliability and Validity for Cognitive/Non-Cognitive Measures**

‘Reliability’ refers to which the items measure a construct that is stable across the test and time (e.g. inter-item correlation). ‘Validity’ refers to the level at which the inferences made about the adolescent are supported by the data. To increase the validity of the cognitive tests, items with poor indicators (poor in-fit or low item–test correlation) were excluded from the scores. For the purpose of the study, the raw scores were used since, both corrected and raw scores did not provide any differences in outcome measures. Correlations of scores between raw scores and corrected scores were above .90 on most of the tests, except math’s achievement, where they were above .85. Additional information regarding validation procedures can be found.
in Cueto & Leon (2012).

For non-cognitive measures, the factor loadings have the expected sign and they are statistically significant. The factor loading values of 0.89 for the self-efficacy were obtained in the pooled sample, respectively. The validity of the measures tested is high (Cueto & Leon, 2012). In most cases test scores are associated with several variables in the Young Lives database. For example, children with better-educated parents, who are in school, from wealthy families, tend to score higher.

**Analysis Procedures**

Data were collected from Ethiopia (n = 974), Peru (n = 678), Vietnam (n = 972), and India (n = 977), with participants nested within sentinels in each country. Because individuals in the same sentinel may share some common experiences that violate the assumption of independence required for a regression and because differences in variance from one sentinel to the next likely violates the assumption of homoscedasticity, therefore hierarchical linear modeling (HLM) was used to test the hypotheses. The HLM models treat participants as level-1 units and sentinel sites as level-2 units. Country is not treated as a third level due to differences in measurement of the key variables (i.e., PPVT, CLOZE, and Math test) from one country to the next. This is because the change in measurement makes it impossible to know if between-country variance is real or simply due to differences in how the questions were asked. Consequently, the models were fit separately in each country.

HLM deals with nesting by introducing a random effect for the clusters, which is done as follows. Begin with a model at level-1 for language ability:

\[ \text{Language}_{ij} = \beta_0 + e_{ij} \]

where \( i \) indexes the \( i \)th participant in the \( j \)th sentinel. There are no predictors in this “empty”
model, but it can be used to determine if there is sufficient between-sentinel variance to warrant using HLM. A lack of between-cluster variance would mean that most of the variability takes place between individuals without regard to sentinel, and hence HLM would not be necessary. The percentage of between-group variability can be determined by allowing the intercept to vary randomly around the overall mean,

$$\beta_{0j} = \gamma_{00} + u_{0j}$$

Substituting into the original equation,

$$\text{Language}_{ij} = \gamma_{00} + u_{0j} + e_{ij}$$

Here $\gamma_{00}$ is the overall average language score, $u_{0j}$ represents the shift up or down from the overall mean for those in the $j$th sentinel, and $e_{ij}$ is the remaining participant-level error. The total variance associated with $u$ and $e$ can be determined by estimating a variance component at each level. Let $\tau$ be the variance at level-2, and let $\sigma^2$ be the variance at level-1. The proportion of variability at the sentinel level, called the *intracllass correlation coefficient (ICC)* can be determined as

$$\text{ICC} = \frac{\tau}{\tau + \sigma^2}$$

After verifying the need for HLM, a full model can be fit:

$$\text{Language}_{ij} = \beta_{0j} + \beta_{1j}X_1 + \beta_{2j}X_2 + \cdots + \beta_{kj}X_k + e_{ij},$$

where the $X_j$ are the independent variables, in this study all measured at level-1. Due to the clustering, a random effect is introduced to account for the between-sentinel variability in average outcomes,

$$\beta_{0j} = \gamma_{00} + u_{0j}$$
This study does not hypothesize that any level-1 slopes vary from one sentinel to the next, so no random component is added to them.

\[ \beta_{ki} = \gamma_{k0} \]

Substituting leads to the final model

\[ \text{Language}_{ij} = \gamma_{0j} + \gamma_{10}X_1 + \gamma_{20}X_2 + \ldots + \gamma_{k0}X_k + u_{0j} + e_{ij} \]

HLM estimates fixed effects for each of the \( \gamma_{k0} \), which are interpreted like regular regression coefficients, as well as variance components to summarize the random effects, here \( u_{0j} \). The hypotheses focus on the fixed effects, but it is necessary to include the random effect in order to correctly adjust the estimation to deal with the issues of non-independence and heteroscedasticity caused by the cluster. In the absence of the random effect, the standard errors would be incorrect and most likely biased downwards. This could lead to claiming a result was significant when it was not (a Type-I error). The interpretation will focus on the fixed effects estimates, but correct inferences are allowed by the HLM specification.

All of the independent variables in this study are measured at the participant level, although HLM could accommodate predictors measured at the level of sentinel. A sentinel-level variable would be one that was constant for all individuals in the same sentinel but different for individuals from different sentinels. Sentinel level variables would be included in the models for the intercept. For example,

\[ \beta_{0j} = \gamma_{00} + \gamma_{10}Z_1 + u_{0j} , \]

where \( Z \) is a predictor that varies between sentinels only.

Note that centering is commonly done to analyze variables measured on an interval scale when zero is not a meaningful value, and that centering can also aid interpretation of HLM
models when the randomly varying intercept is of interest. An intercept is the expected value of
the outcome when all of the variables are at zero, so centering interval-level variables means that
the intercept is the expected value when these variables are at their mean. Only one of the
variables in the study was measured on an interval scale: wealth index. It was grand-mean
centered so that the interpretation of the intercept is the expected outcome for somebody at the
mean of all participants across all sentinels.
CHAPTER 3

Results

This dissertation study explored the relationship between youth participation and cognitive and non-cognitive skills. First, descriptive data that highlight the nature of youth participation and differences by country are presented. Next, steps taken to answer the second research question are provided and models with participation and subgroup variables are displayed.

The Young Lives youth subsample data includes data points for 3,601 adolescents who were part of this study between 2009 and 2010. This subsample included 475 females (49%) in Ethiopia, 316 females (47%) in Peru, 491 females (51%) in Vietnam, and 496 females (51%) in India. ‘Type of site’ was identified as either urban or rural. In Ethiopia (n = 571, 59%) of youth lived in a rural region. Twenty-four percent of youth in Peru lived in a rural region whereas 80% of young people in Vietnam reported living in a rural region. In India, majority (75%) of youth reported residing in a rural region. As measured by the wealth index described earlier, Ethiopia was the poorest country in this subsample and Vietnam was the wealthiest. For more information see Table 2.

Research Question (RQ) 1: What is the nature of young peoples’ participation (i.e., education, work, youth programs), as captured in the Young Lives Data?

a. Does participation differ by country (Ethiopia, India, Peru, Vietnam)?

Descriptive statistics.

Results from the descriptive analyses indicate that a high percentage of young people in Ethiopia, Peru, Vietnam, and India are actively participating in at least one of the three categories (i.e., education, work, and youth programs) discussed in detail earlier. Specifically, when it
comes to school enrollment, 77% of young people in Vietnam are attending school and about 93% in Peru. India and Ethiopia are falling right in the middle. When it comes to work, youth were more active in ‘unpaid work’ rather than ‘paid work’. By creating two categories of work, a clearer distinction of the type of work that is being performed and a more inclusive definition of youth labor was displayed. When it comes to ‘paid work’ the smallest percentage of youth working was in Vietnam (7%) while the highest percentage (14%) was reported among youth in India. While very few young people participated in paid work the opposite was found for unpaid labor. For example, 74% of Indian youth reported working at least one hour while 98% of young people in Ethiopia reported the same. Peru and Vietnam fell in between range of the two countries mentioned above. Lastly, youth participation in social programs was also measured. The results show a wider variation in participation in social programs. For example, only 14% of youth in India participated in extracurricular activities, whereas in Ethiopia, 55% of youth participated in social programs.

Frequency of participation (i.e., schooling, work, social programs) varied by countries studied in this subsample. School enrollment was highest in Peru and lowest in Vietnam by twenty points. The smallest variation in participation among all four countries was for ‘paid work’. At least 90% of youth performed some form of unpaid work in all of the three countries except India. Finally, youth in Ethiopia reported highest levels of participation in social programs. In the other three countries (i.e., India, Vietnam, Peru) less than half of the youth reported participating in any social programs, with the least active, at only 14%, being India.

[Table 2 about here.]
**Brief Discussion**

According to the data, a majority of youth were working and going to school during the time of data collection. More young people were participating in unpaid work than attending school in Ethiopia and Vietnam. It is important to highlight that these findings, specifically young people attending school and working, are comparable to the youth in western cultures. Conversely, very few youth reported working for pay. Finally, only half of the young people sampled reported participating in social programs. Because most of the youth were working and going to school during the time of data collection, it makes sense that very few youth had any time to participate in leisure or recreational activities.

[Table 3 about here.]

Models for each dependent variable (language, reading, math, self-efficacy, and educational aspiration) were analyzed separately within each country (i.e., Ethiopia, Peru, Vietnam, India). As shown (see table 3), normal distributions were not found for many tests and countries. Table 3 summarizes the descriptive statistics for these variables. Trends observed between countries with respect to cognitive measures are showing that Ethiopian youth are scoring the lowest and Vietnamese scoring the highest on all PPVT, Math, and Cloze test. For self-efficacy, all countries fare the same. In regards to educational aspirations, Ethiopian youth reported having the lowest aspirations whereas Indian youth reported having the highest.

**Rationale for Using Hierarchical Linear Modeling (HLM).** The first step in the HLM analysis involved estimating the intraclass correlation coefficient (ICC) for each dependent variable to determine if sufficient variance existed across sentinels to warrant the use of nested data models. Table 4 displays the intra-class correlation coefficients for each of the dependent variables separated by country. The values represent the proportion of all variability that takes
place at the sentinel level. It is clear from the table that some outcomes have greater between-sentinel variance than others.

The ICCs range from .044 (India) to .335 (Ethiopia) for Cloze scores, which is the outcome with the greatest sentinel-to-sentinel variability and .046 (India) to .125 (Ethiopia) for desired educational attainment, which is the outcome with the lowest between-sentinel variance. Sentinel differences are greatest for Vietnam overall and smallest for India. Since at least 10% of the variance is attributed to the sentinel level in at least one country for all outcomes, HLM was used for all models. Thus, HLM was used to account for the nested structure of participating youth in each sentinel. This model takes into account the potential interdependence of scores for youth within the same site. This is important because students in the same sentinel are likely to experience the same quality characteristics in comparison to youth in different sites.

[Table 4 about here.]

**Research Question (RQ) 2: How does participation relate to cognitive and non-cognitive skills?**

The first outcome examined was language ability. The results are in Table 5. School enrollment turned out to be a significant predictor of language ability in all countries such that being enrolled in school is associated with high language scores (Ethiopia $b = 12.98, se = 3.71$, Peru $b = 6.29, se = 2.35$, Vietnam $b = 15.97, se = 2.06$, and India $b = 25.03, se = 3.67$). Social program involvement predicted language ability in Ethiopia ($b = 7.07, se = 2.17$) and India ($b = 12.26, se = 3.41$) such that being involved with social programs is associated with higher language scores. Unpaid work was a predictor of language ability in India only ($b = -5.84, se = 3.03$), such that working for no pay was associated with lower language abilities. Rural zones had significantly lower scores compared to urban ones in Ethiopia ($b = 14.64, se = 6.23$) and
Peru ($b = 8.49$, $se = 1.88$). Females had significantly lower scores in Ethiopia ($b = 5.60$, $se = 1.98$), Peru ($b = 2.28$, $se = 1.12$) and India ($b = 12.24$, $se = 2.38$). Wealth had a significant positive effect in every country. The degree of variability in language ability between sentinels as measured by the variance component was largest in Ethiopia, followed by Vietnam and India, and lowest in Peru.

Next, math ability was entered as the outcome. Results are in Table 6. School enrollment predicted math ability in all countries such that being enrolled was associated with higher math scores (Ethiopia $b = 1.14$, $se = 0.59$, Peru $b = 4.40$, $se = 0.81$, Vietnam $b = 5.69$, $se = 0.57$, and India $b = 4.05$, $se = 0.62$). Social program involvement predicted math ability in Ethiopia ($b = 1.17$, $se = 0.32$), Peru ($b = 0.85$, $se = 0.40$), and India ($b = 1.40$, $se = 0.53$) such that participation in social programs implied higher scores. Unpaid work predicted math ability in India ($b = -2.37$, $se = 0.65$), where working for no pay was associated with lower math scores. Rural areas had lower scores compared to urban ones in Ethiopia ($b = 1.78$, $se = 0.71$) and Peru ($b = 1.60$, $se = 0.63$). Females had significantly lower scores in Ethiopia ($b = 1.34$, $se = 0.29$), and India ($b = 1.74$, $se = 0.38$) but higher in Peru ($b = -1.15$, $se = 0.40$). Wealth had a positive and significant effect in every country. The degree of variability in math ability between sentinels is largest in Vietnam, followed by Peru, and lowest in Ethiopia and India.

Table 7 presents results for reading comprehension. School enrollment was a predictor of reading comprehension in all countries, suggesting that not being enrolled was associated with lower reading comprehension scores (Ethiopia $b = 1.11$, $se = 0.52$, Peru $b = 2.51$, $se = 0.78$, Vietnam $b = 3.21$, $se = 0.41$, and India $b = 4.80$, $se = 0.70$). Social program involvement
predicted reading comprehension in Ethiopia ($b = 1.04, \text{se} = 0.27$) and India ($b = 1.28, \text{se} = 0.57$) such that not being involved in social programs is associated with lower reading scores. Unpaid work was a significant predictor of reading comprehension only in India ($b = -1.40, \text{se} = 0.51$) such that unpaid work was associated with lower reading scores. Those from rural backgrounds are disadvantaged relative to urban respondents in Ethiopia ($b = 2.13, \text{se} = 0.78$) and Peru ($b = 3.14, \text{se} = 0.62$) and in India those from urban zones had lower scores ($b = -2.69, \text{se} = 0.85$).

Females score significantly higher than males in Vietnam ($b = -1.09, \text{se} = 0.28$), and the opposite was found in India ($b = 1.30, \text{se} = 0.42$). Wealth had a positive and significant effect in every country. The degree of variability in reading comprehension between sentinels was largest in Peru, followed by Ethiopia, and lowest in Vietnam and India.

[Table 7 about here.]

Turning to self-efficacy (Table 8), school enrollment mattered significantly in Ethiopia ($b = 0.10, \text{se} = 0.06$), Vietnam ($b = 0.28, \text{se} = 0.04$), and India ($b = 0.33, \text{se} = 0.05$), such that not being enrolled was associated with lower self-efficacy. Social program involvement was a significant predictor of self-efficacy in Ethiopia ($b = 0.09, \text{se} = 0.03$), Peru ($b = 0.06, \text{se} = 0.03$) and India ($b = 0.08, \text{se} = 0.04$) such that not being involved in social programs was associated with lower self-efficacy. Unpaid work predicted self-efficacy in Vietnam ($b = -0.11, \text{se} = 0.05$) and India ($b = -0.12, \text{se} = 0.04$) such that, unpaid work was associated with lower self-efficacy. Paid work predicted self-efficacy in India ($b = 0.11, \text{se} = 0.05$) such that, working for pay is associated with higher self-efficacy score. Those from rural backgrounds are disadvantaged relative to urban respondents in Ethiopia ($b = 0.10, \text{se} = 0.05$). Females had lower self-efficacy scores than males in Ethiopia ($b = 0.06, \text{se} = 0.03$) but higher self-efficacy in Peru ($b = -0.12, \text{se} = 0.03$). Wealth had a significant effect in every country except in Ethiopia. The degree of
variability in self-efficacy scores between sentinels was quite small for all countries indicating that self-efficacy scores were quite similar across sentinels within each country.

[Table 8 about here.]

The final outcome explored was educational aspiration. School enrollment was a predictor of educational aspiration in all countries such that not being enrolled in school was associated with lower educational aspiration (Ethiopia $b = 2.27$, $se = 0.26$, Peru $b = 2.27$, $se = 0.28$, Vietnam $b = 3.46$, $se = 0.22$, and India $b = 3.99$, $se = 0.31$). Social program involvement predicted educational aspiration in Peru ($b = 0.39$, $se = 0.14$) and Vietnam ($b = 0.51$, $se = 0.18$) such that not being involved in social programs was associated with lower educational aspiration. Paid work was a predictor of educational aspiration in India ($b = -0.89$, $se = 0.37$) such that paid labor was associated with lower educational aspiration. Females had lower aspiration than males in Ethiopia ($b = 0.32$, $se = 0.13$) but higher aspiration in Vietnam ($b = -0.32$, $se = 0.16$).

Wealth had a significant effect in every country except in Ethiopia. The degree of variability in educational aspiration between sentinels was largest in Ethiopia, followed by Vietnam, and lowest in Peru and India.

[Table 9 about here.]

The assumption of no multicollinearity between predictors was met for all models in all countries, with variance inflation factors (VIF) below 2 (range 1.01-1.81).

**Brief Discussion – Participation Strategies**

**Schooling.** After a typical sequence of descriptive and statistical testing, the relationship between schooling and outcome variables was explored. According to the data, both schooling and participation in social programs had a positive impact on many of the cognitive and non-cognitive measures. Particularly, school enrollment had a positive impact on language scores,
math scores, and reading comprehension in all four countries (i.e., Ethiopia, Peru, Vietnam, India). Similar trends were found for non-cognitive skills. In all countries except Peru, youth who were in school had higher self-efficacy scores. Finally, school enrollment predicted higher educational aspirations among youth in all four countries. These findings come as no surprise given the previous research presented on the positive impact of education on youth in general.

**Social Programs.** Participation in social programs had a positive impact on cognitive and non-cognitive skills in the Young Lives subsample. For example, youth participating in social programs scored higher on the PPVT in Ethiopia and India. Participation in social programs positively impacted math ability in Ethiopia, Peru, and India. Furthermore, youth who participated in social programs had a higher score on the reading comprehension (CLOZE test) as compared to youth who didn’t in Ethiopia and India. In terms of non-cognitive scores, youth who participated in social programs had higher self-efficacy scores in Ethiopia, Peru, and India. Finally, youth that participated in social programs had higher educational aspirations compared to those who didn’t in Peru and Vietnam. The findings can be attributed to the positive nature of social programs as explained in the literature above.

**Work.** As was discussed previously, youth labor was split into two categories – paid and unpaid work. Paid work had a positive impact on self-efficacy in India. However the opposite was found for educational aspirations, such that youth who were working for pay had lower educational aspirations. Furthermore, youth in India who were working but were not compensated for their work scored lower on all cognitive measures. In Vietnam and India, unpaid work was negatively associated with self-efficacy. Given the inconsistencies present on youth labor, a more explicit and inclusive definition of work is needed. It may be that the type of work and the amount of hours accounts for the various differences.
Type of site. Youth who were living in rural regions in Ethiopia and Peru scored lower on all the cognitive measures (i.e., language, reading comprehension, math). In India, youth living in urban regions scored lower on reading comprehension as measured by the Cloze test. Once again, current findings are consistent with previous literature showing that young people who reside in rural areas are naturally at a disadvantage due to location, climate concerns, and resources. In Ethiopia, youth living in urban sites scored higher on the self-efficacy measure.

Gender. Females scored lower in Ethiopia, Peru, and India on the language test. Males scored higher on the math test in Ethiopia and India but lower in Vietnam. Additionally, males scored lower on reading comprehension in Vietnam but higher in India. Gender differences may be attributed to multiple reasons however most are embedded in cultural practices, for example, in India parents opt to send males to schools because males will invest in their family and girls are more likely to get married and be taken care of (Himaz, 2009). In Ethiopia, too much schooling for girls is equated with marriage status in that educated girls are too expensive (dowry) and don't have the necessary skills that are beneficial on farmland (Woldehanna, Gudisa, Tafere, & Pankhurst, 2011). In Vietnam, boys may be performing worse on cognitive measures because of cultural differences and are not passing entrance exams that are required before entering high school. Additionally, in Vietnam, more girls are taking extra courses provided by the government, which may aid in the passing of the entrance exams (Duc, Thang, Tien, Hang, Thuy, 2011).

On non-cognitive measures, males had higher educational aspirations in Ethiopia, but the opposite was found for youth in Vietnam. In contrast, males in Ethiopia did have a higher score on the self-efficacy measure, which may stem from active participation in social programs.
Males scored lower on the self-efficacy measure in Peru. Differences in gender may stem from deeply rooted behaviors and cultural expectations for men and women.

**Wealth index.** Wealth was a strong predictor of both cognitive and non-cognitive scores for almost all countries. Thus, youth who are wealthier scored higher on language measure and math score in all four countries. Wealth was positively related to reading comprehension in all countries except Ethiopia. The findings may be attributed to having more access to resources such as tutoring and not having to work as many hours, which would allow for more time to study. In addition, the wealthier youth had higher education aspirations and scored higher on the self-efficacy measure in all countries except Ethiopia.
CHAPTER 4

Summary and General Discussion

The aim of this dissertation was to analyze data relevant to a dynamic approach to development fostered by youth participation in education, work, and youth programs. Hierarchical linear modeling techniques with Young Lives data was used to examine the relationship between the variables mentioned above.

The Nature of Young Peoples’ Participation (i.e., education, work, youth programs)

During the time of data collection, a majority of youth reported working and going to school in all four countries. In Ethiopia and Vietnam, more young people were performing unpaid work than attending school. Conversely, very few (7-14%) of the youth reported working for pay, in all four countries. Work was divided into two separate categories since some young individuals reported spending considerable periods of time involved in unpaid work, taking care of family members or working on the family farm, and quite often research tends to overlook that very relevant sample. Additionally, a previous study has found that unpaid work can be gendered, with girls more likely to work within the home and boys outside it (Orkin, 2011). Only half of the youth reported being active in the less structured forms of participation, perhaps because most of the youth were working and going to school during the time of data collection.

Participation Differences Across the Four Countries Sampled (Ethiopia, India, Peru, Vietnam)

Participation (i.e., schooling, work, social programs) varied by country. School enrollment was highest in Peru and lowest in Vietnam by twenty points. The reason for this finding may be that most of the youth sampled in Vietnam were living in rural areas; therefore, distance to school, location, environmental conditions may pose more obvious risks and
obstacles. Additionally, in Vietnam youth are expected to pass entrance exams, which may be a contributing factor to higher dropout rates (Duc, Thang, Tien, Hang, & Thuy, 2011). Whereas in Peru, during the time of data collection, the country was growing economically at a fast pace as well as the majority (77%) of youth reported residing in an urban area where there is more access to transportation and distances to get to school are shorter. Furthermore, in recent years, the Peruvian government has taken the necessary measures to provide government programs that aim at promoting primary education (Cueto, Escobal, Penny, Ames, 2011).

The smallest range in percentage among all four countries was for ‘paid work’. Additionally, for unpaid work, which primarily meant either working at home or on the family farm with no compensation, at least 90% of youth worked in all of the three countries except in India, where only about 74% reported doing unpaid work. Since most of the youth sampled came from a poor background, their low-income status naturally forces them to multitask by going to school and working.

Finally, Ethiopia was the highest ranked country in terms of youth participation. In the other three countries (i.e., India, Vietnam, Peru), less than half of the youth reported participating in any social programs. Youth were found to be least active (14%) in India. Given that most of the youth sampled reported working and going to school, it may be that the individuals that reported doing neither were the only ones that had time for recreational activities and social programs. Future research should investigate, who are the youth that are reporting participating in social programs and their circumstances.

**Education as a Predictor of Cognitive Abilities**

Schooling directly impacts writing, reading and math scores. Specifically, attending school predicted language, math scores, and reading comprehension in all four countries.
Additionally, those who were wealthier had a larger positive effect for attending school on all cognitive measures. It may be that those who are wealthier have more access to additional resources like books, computers or tutoring and therefore get the maximum out of schooling. This dissertation highlights the importance of attending school and the impact that it has on cognitive development.

An individual’s ability to use and profit from school has been recognized as playing a unique role in escaping poverty in the United States and increasingly in developing countries. Policies such as the Millennium Developmental Goals and the Education For All declaration have led to notable advances in school access; this has been displayed in this dissertation with an overwhelming number of youth attending school. There is a body of evidence including this dissertation supporting the link between education, adolescent development (cognitive and non-cognitive) and academic performance. Mounting evidence shows that in developing countries educating girls is one of the most efficient ways to spur development. For example, for every year beyond fourth grade that girls go to school, their wages rise by 20% (Basic Education Coalition, 2013). Furthermore, when an educated woman’s income increases, she will reinvest 90 % of that money in her family (Basic Education Coalition, 2013). A recent Lancet study found that half of the reduction in child mortality over the past forty years was as a result of better-educated women (Basic Education Coalition, 2013). Finally, if all women in sub-Saharan Africa had a secondary education, 1.8 million lives could be saved each year (Basic Education Coalition, 2013). Based on this dissertation and previous literature, education has social, cognitive and economic benefits.

It is important to note that this dissertation did not investigate or control for the quality of education, attendance, and other factors that may impact academic performance. Thus,
differences between countries may stem from the quality of teachers, resources, outdated curricula, and poor infrastructure. Additionally, the cognitive tests used in all four countries differed; thus further comparison between countries cannot be made.

**Education as a Predictor of Non-cognitive Abilities**

Young people’s life-experiences shape their personal wellbeing, their peer relationships, self-esteem, and future aspirations. These are not just individual characteristics but are mediated by youth’s memberships. This dissertation examined whether participation in school also impacts non-cognitive skills. Current findings show that attending school positively predicted educational aspirations in all four countries. Youth who are enrolled in school may be more inclined to continue bettering themselves, have more exposure or access to role models/teachers, and ultimately opportunities. Additionally, parents who promote schooling and want their children to finish school may have higher expectations and expect their children to complete secondary education, which may be another source of motivation.

Other studies have confirmed current findings, showing that both parents and adolescents have high expectations for schooling among the Young Lives sample in all four countries. Specifically, data from 2009 illustrates that 40% (Andhra Pradesh) and 74% (Ethiopia and Peru) ideally wanted to complete university. Additionally, 32.5% (Andhra Pradesh) and 78% (Ethiopia) of parent’s of 8-year-olds also wanted their children to complete university (Woodhead, Frost, & James, 2013). In one particular study using the young lives sample, interviews with youth and their parent’s showed that education is highly valued by the families. In particular, Marta, a Peruvian young woman, growing up in a rural area states: “We’re not going to suffer like this in the mud… it’s better that I go and study.” Or a father in Peru states:
“I walk in the fields in sandals. At least he will go with shoes if he gets a good head with his education” (Woodhead, Frost, & James, 2013, p.24).

Along with higher educational aspirations among the sample enrolled in school, schooling also had an impact on self-efficacy scores in all countries except Peru. In other words, youth who attended school had higher levels of agency. Because of the various inequalities present in developing countries, specifically, when it comes to school accessibility and the quality of schooling, it may be that those youth who were enrolled in school felt that it was up to them to succeed, along with being appreciative that they have the opportunity to go to school. For youth in the three countries mentioned above, schooling may serve as a motivation of escaping poverty, which would explain why they might be more determined leading to higher scores on the self-efficacy measure.

In the context of a pro-poor sample, these results are important because self-efficacy has been directly linked to life satisfaction of young adults. According to the authors, high levels of self-efficacy determined psychological well-being (Magaletta & Oliver, 1999) and linking life satisfaction with optimism and positive thinking (Caprara & Steca, 2006). Given that the relationship between self-efficacy and schooling was found in Ethiopia, Vietnam, and India, it may be important to investigate what aspects of this particular participation strategy promotes higher levels of self-efficacy.

**Work as a Predictor of Cognitive**

The burden of having to grow up too fast, too soon, is even more prominent in developing countries, where young people have to multi-task between work and school and even sacrifice not going to school in the goal of relieving the burden on the family. Findings from this dissertation show that youth labor did predict cognitive abilities in India. Youth who performed
unpaid labor, scored lower on all the cognitive measures. Current findings support the literature on the negative impact of child labor on academic achievement.

**Work as a Predictor of Non-cognitive Abilities**

Findings show that paid work had a positive impact on self-efficacy in India. It may be that youth who are earning an income and can therefore help their families financially feel a sense of agency and industry through contribution. Thus, when pursued steadily with balance and characterized by learning opportunities, work may be beneficial. However, in Vietnam and India, unpaid work was negatively associated with self-efficacy. Additionally, youth who were working for pay had lower educational aspirations in India. Those youth that are missing school to follow peak harvest season and help out their families on the farm may be less hopeful about the future due to their circumstances.

Given the inconclusive nature of the costs and benefits of youth working, one way of understanding the impact of work should depend on the general social and cultural context, as well as the kind of work being performed. For example, in Mortimer’s study, both children and parents viewed work as a positive opportunity building self-confidence and teaching a variety of skills. In the Mortimer’s study, findings show that boys who worked less than twenty hours a week during high school were more likely than non-workers to further their education, obtain university degrees, and ultimately find well-paid employment. Finally, four years after leaving high school, youth who worked, were most likely to have steady employment, and they had the highest average income of all groups (Mortimer, 2007).

On the other hand, some literature suggests that employment of children leads to behavioral problems (see Greenberger & Steinberg, 1985). Although paid employment may encourage earlier entry into smoking and drinking, youth who had worked at high school moved
into adult family roles in a normative manner. Indeed, positive experiences at work may provide a buffer against tensions at school and home (Call, 1996). While Mortimer’s study does not use a sample of youth in less developed countries, it challenges assumptions that work is detrimental to child development, and particularly that it is incompatible with schooling.

In another study by Young Lives, findings show that working may be detrimental to youths’ development. For example, both physical hazards (such as wounds while harvesting and pesticides exposure) and psychosocial effects, such as being looked down on and bullied by peers (Morrow & Vennam, 2012) were experienced among the youth residing in Andhra Pradesh. Even with the negative connotations that come along with labor, Young lives youth reported that work was a source of pride and a sense of accomplishment since they were able to contribute to their families, helping manage the household (Crivello, G., 2011; Morrow & Vennam, 2012,) and learning useful skills (Morrow & Vennam, 2012). In short, the balance between work and school affects youth very differently and need to be studied in more detail since labor may be one of the factors contributing strongly to diverging life trajectories, which may be positive or negative.

**Social Programs as a Predictor of Cognitive Abilities**

As was previously discussed, the development of young people’s cognitive and non-cognitive skills occurs through a complex set of factors, including education. However, It is by no means the only route by which children develop such skills. Children’s extracurricular activities (i.e., youth programs) in combination with schooling are as important in the development of cognitive and non-cognitive skills.

Effective social programs bring a wide range of benefits to youth, families and communities. Social programs can boost academic performance, reduce risky behaviors, promote
physical health, and provide a safe, structured environment for the children of working parents
(Naftzger et. al., 2007; Huang, Leon, La Torre, Mostafavi, 2008; Catalyst & Brandeis University, 2006). This dissertation supports the many positive benefits of attending social programs. For example, social programs predicted all forms of cognitive skills measured in Ethiopia and India. Additionally, in Peru, social programs predicted math abilities. It may be that social programs provide youth the ability to produce and exchange ideas through verbal discourse. Social interactions are very different from the ones youth partake in school where the environment is more structured. In school, youth often are expected just to listen and follow instructions and not engage in the meaning-making practices where actual learning occurs.

Social programs may serve as a balance between school (which may be too structured) and neighborhoods (lack structure). This balance allows for a new found freedom where youth engage in discourses that aid in problem-solving skills and/or serve therapeutic functions. For example, among Young Lives youth participating in social programs may be an outlet where young people come together to discuss their frustrations, share their struggles and provide solutions to those problems.

Social Programs as a Predictor of Non-cognitive Abilities

Regarding non-cognitive skills, participating in social programs impacted educational aspirations in Peru and Vietnam. Interacting with like-minded individuals who are striving towards common goals may become an inspiration and a source of support especially for youth growing up in low-income households where resources are scarce, and both parents are working around the clock to support the household. Participating in social programs also impacted self-efficacy scores in Ethiopia, Peru, and India. Differences between countries may stem from the type of social programs that youth are part of. For example, in wealthier countries such as Peru
and Vietnam, youth may be participating in various NGO led programs that promote higher educational aspirations. In my review of the literature on positive youth development, a recurring point that social relations/activities provide opportunities and generate social capital for mobilizing growth-enhancing resources was presented (Jarrett, Sullivan, & Watkins, 2005). This dissertation supports the idea that social programs contribute to youth development by having a direct positive impact on young people’s cognitive and non-cognitive skills.

**Studying Development - Subgroup Variables**

Since the most marked inequalities among Young Lives children relate to households’ wealth, urban/rural location, and gender, this dissertation explored the way that different determinants of inequality predict outcome measures. The findings provide evidence that there is a need for global efforts that will reduce disparities present between social groups. In the current sample, data reveal a clear trend that educational disparities persist among diverse social groups. For example, the ‘type of site’ where youth resided had an impact on youths’ cognitive and psychosocial qualities. To be more precise, youth living in rural areas in Ethiopia and Peru scored lower on language, reading comprehension, and math scores. Because Ethiopia is one of the poorest countries, it makes sense why Young Lives youth who have limited resources and are bounded by environmental factors would experience inferior scores compared to their counterparts. Additionally, wealthier youth scored higher on all cognitive measures. Wealthier individuals have access to tutoring, better-qualified teachers, and other resources which may be the source for this finding (Sirin, 2005)

**Theoretical Implications**

Results from this dissertation have potential policy, practice, and research implications. This research contributes in several important ways to the examination of determinants of
children’s cognitive and non-cognitive skills. Even though education in developing countries may not be up to par with the standards of education in developed countries, this dissertation provides evidence that the students who attend school, on average, scored higher on cognitive tests and were more likely to exhibit higher levels of agency and higher hopes for their future. However, from current research we see that roles based on gender, geographical locations, and SES are still present and persistent. Given the inequalities present (among genders, socioeconomic classes and regions youth reside in), more work is needed in shedding light on issues of accessibility. Additionally, future policies need to highlight and provide remedies to the various disparities present among youth in developing countries.

More importantly, even though school is crucial for youth development, so are social programs. Specifically, social programs are as important to youth development as schooling, although the relative magnitudes of the relationships are unknown. Other studies have displayed the benefits of social participation not limited to cognitive and non-cognitive measures. For example, participation in after-school programs has been associated with reduced drug use (Investing in Our Young People, University of Chicago, 2006) and criminal behavior (UCLA National Center for Research on Evaluation, Standards and Student Testing, 2007). Additionally, after-school programs were shown to play a major role in encouraging physical activity and healthy dietary habits (Mahoney, J., Lord, H., & Carryl, 2005). Based on the previous study findings and this dissertation, interventions working with adolescent youth should promote active participation in social programs.

Finally, youth labor as a participation strategy was studied as a feature of how young people’s responsibilities expand. While work undoubtedly can undermine schooling, this is not inherent as was displayed in this dissertation. Furthermore, supplemented with previous
literature, work may provide an active coping strategy for poverty and may assist young people in learning useful and marketable skills.

As was already mentioned, review of the literature on the transition into adulthood highlights the importance of including gender, social class, and location to understand development from a multifaceted perspective (Sherrod, Haggerty, & Featherman, 1993; Shanahan, 2000). To capture development in adolescents, attention must be given to the diversity of subgroup experiences. Based on our findings of subgroup differences between genders, geographical locations, and socioeconomic classes, targeting marginalized social groups is necessary to capture fully disparities present and how these differences vary among other countries. Currently, there is very little known about the various disparities present within countries and how to best and most efficiently reduce them. If educational disparities are neglected during earlier stages of development, economic and social disparities will likely persist.

Few recommendations for solutions are provided to reduce disparities among gender, wealth, and geographical regions. First, developing countries need to target the various gaps in the literature and refine policies that highlight a more explicit reality of youth. Additionally, to address the various inequalities present, services to marginalized groups should be offered by cash transfers or by other means. Moreover, geographically targeted intervention may be useful since the most marginalized are the ones residing in the most restricted locations. Other recommendations include providing adequate education regarding climate-related constraints, cultural constraints, economic opportunities, and health facilities, as well as improving education quality (World Bank OPCS, 2005).
Limitations

There are several limitations to the dissertation research. First, data were not analyzed longitudinally but rather cross-sectionally. In cross-sectional analyses, it is not possible to measure change over time. Examining growth in particular domains would have provided a clearer understanding of how cognitive and non-cognitive skills develop through childhood into adulthood and what hinders these abilities. Additionally, the time of when the various forms of youth participation play the most crucial role in development is unidentifiable.

Using secondary data collected in different contexts also introduced complications. Interpreting the results posed a challenge due to the culturally relevant and sensitive information that might have been overlooked. Additionally, one of the concerns may be testing bias – one group scoring higher due to test features and not intellectual ability. Despite all efforts made in designing the surveys, the possibility of bias cannot be discounted. Further, on a few of the tests, the scores were not normally distributed. According to the Young Lives team, bias may occur when attempting to develop a single set of tests. Therefore, while the variation in abilities across languages within countries and across countries was very high, for some children, their abilities were not estimated well (Cueto & Leon, 2012).

Future Directions

As previously discussed, future research examining the relationship between various forms of participation and its relationship to cognitive and non-cognitive skills should use a longitudinal research design to properly establish the temporal sequence of the relationships explored in this dissertation. Given the nature of the findings - showing that there is a direct relationship between all forms of participation and cognitive and non-cognitive skills – the next line of research should investigate what specifically about participation in school and after
school programs aids in cognitive and non-cognitive skills. Thus, a follow-up study, using qualitative methods, should investigate what aspects of youth participation seem to promote positive youth development and why, among young people in developing countries (Morrow & Vennam, 2010).

Furthermore, because this dissertation examined youth participation independently, it may be of value to examine youth participation collectively—individuals who are working and going to school, versus someone who is only attending school, versus someone who is multitasking by participating in all three activities (i.e., school, work, and youth programs). Youth that multi-task (working along with going to school) may be unable to keep up with school demands or the pressures to succeed and get good grades. For example, one particular study suggests that youth who are expected to over-achieve and multi-task may become burned out leading to higher anxiety and stress (Luther, 2005). On the other hand, youth who are attending school and participating in social programs may find recreational time as an opportunity to de-stress.

**Conclusion**

This dissertation makes several unique contributions. It is one of the few quantitative studies looking at the relationship between various forms of participation that youth partake in their daily lives, and how those forms of participation impact youth development as measured by cognitive and non-cognitive skills. Assessing cognitive and non-cognitive skills in young people is a mere form of measuring future success. Due to a large sample and a small dropout rate, this study was methodologically sound. Finally, this dissertation explored a topic that has received very little empirical attention, especially in developing countries.
Although, several studies in developing countries have illustrated that completion of primary education does not always promote fundamental skills, such as numeracy and literacy (Alemu et. al, 2003; Galab et. al, 2005; Heckman & Masterov, 2007; Hill & Chalaus, 2011), the current study shows that those enrolled in school on average score higher on both (cognitive and non-cognitive) measures compared to youth who are not enrolled. However, based on what previous studies have reported, we know that not everyone has equal access to education. Access to a good quality education may be determined by families’ income (whether the child works to help with finances or attends school) and adolescent’s gender (girls are less likely to attend school). Thus, government leaders, parents, and researchers should explore more thoroughly the idea of youth partaking in other forms of participation, such as after-school programs in addition to schooling.

Additionally, how we define learning and under what conditions learning occurs needs to be reconsidered. In the current study youth who participated in social programs scored higher on cognitive and non-cognitive measures as compared to those who did not participate in social programs. The next line of research should investigate whether youth who participated in social programs scored as high on cognitive measures and non-cognitive measures as those individuals who only reported attending school. Based on the current research on social-programs, examination of how youth programs claim to enrich young people’s experience is worth further exploration. It is imperative that instead of re-emphasizing the deficit model of learning, we need to eagerly try to understand the relationship between the content taught in school and how that can be translated to other contexts. Thus, understanding how learning in one context can shape the experience in another context is also of value.
Finally, although findings on youth labor were inconsistent, this dissertation does highlight the importance of having a more inclusive definition of adolescent work given the differences present between youth working for pay versus youth performing unpaid work. Additionally, particularly in underdeveloped countries, competition between school and paid employment is a genuine issue that needs further exploration. Bissell (2004) points that by improving the quality of education; child labor could be potentially eliminated. However, as was discussed earlier, youth labor may serve a beneficial function to youths’ development. Thus, rather than focusing on abolishing youth labor, approaches need to be taken that respect youth and provide resources to those for whom earning and learning serves as the best option.
Table 2

Descriptive Statistics for Independent Variables by Country

<table>
<thead>
<tr>
<th>Variable</th>
<th>Ethiopia</th>
<th>Peru</th>
<th>Vietnam</th>
<th>India</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>% or (m)</td>
<td>n or (sd)</td>
<td>% or (m)</td>
<td>n or (sd)</td>
</tr>
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<td></td>
<td></td>
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<td>92.7</td>
<td>623</td>
</tr>
<tr>
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<td></td>
<td></td>
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<td>No</td>
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<td>423</td>
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<td></td>
<td></td>
</tr>
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<td>2.2</td>
<td>21</td>
<td>9.6</td>
<td>65</td>
</tr>
<tr>
<td>1 + hour(s)</td>
<td>97.8</td>
<td>952</td>
<td>90.4</td>
<td>613</td>
</tr>
<tr>
<td>Paid Work</td>
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<td></td>
</tr>
<tr>
<td>0 hours</td>
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<td>889</td>
<td>87.8</td>
<td>595</td>
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<tr>
<td>1 + hour(s)</td>
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<td>83</td>
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<td>0.59</td>
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</table>
Table 3

Descriptive Statistics for Dependent Variables by Country

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<tr>
<th>Country</th>
<th>PPVT Raw score</th>
<th>Math Raw score</th>
<th>CLOZE Raw score</th>
<th>Self-efficacy</th>
<th>Educational attainment</th>
</tr>
</thead>
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<td><strong>Ethiopia</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>n</td>
<td>Min</td>
<td>Max</td>
<td>m</td>
<td>sd</td>
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</tr>
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<td>21.00</td>
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<td>4.48</td>
</tr>
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<td>5.00</td>
<td>3.83</td>
<td>0.46</td>
</tr>
<tr>
<td>Educational attainment</td>
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<td>0.00</td>
<td>14.00</td>
<td>13.12</td>
<td>2.19</td>
</tr>
<tr>
<td><strong>Peru</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>n</td>
<td>Min</td>
<td>Max</td>
<td>m</td>
<td>sd</td>
</tr>
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<td>4.00</td>
<td>19.00</td>
<td>15.46</td>
<td>1.89</td>
</tr>
<tr>
<td><strong>Vietnam</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>n</td>
<td>Min</td>
<td>Max</td>
<td>m</td>
<td>sd</td>
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<tr>
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<td>18.04</td>
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<tr>
<td><strong>India</strong></td>
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<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>n</td>
<td>Min</td>
<td>Max</td>
<td>m</td>
<td>sd</td>
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<td>India PPVT Raw score</td>
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<td>20.00</td>
<td>14.01</td>
<td>3.46</td>
</tr>
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</table>
### Table 4

*Intraclass Correlation Coefficients*

<table>
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<tr>
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<th>Ethiopia</th>
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<th>Vietnam</th>
<th>India</th>
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<tbody>
<tr>
<td>PPVT Raw score</td>
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### Table 5

*Hierarchical Linear Model of Predictors of Language Ability*

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<tr>
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<td>99.64***</td>
<td>175.54***</td>
<td>142.48***</td>
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<td></td>
<td>(6.08)</td>
<td>(2.39)</td>
<td>(6.23)</td>
<td>(7.72)</td>
</tr>
<tr>
<td>School enrollment (baseline = yes)</td>
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<td>6.29**</td>
<td>15.97***</td>
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<td>(3.71)</td>
<td>(2.35)</td>
<td>(2.06)</td>
<td>(3.67)</td>
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<td>Social program involvement (baseline = yes)</td>
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<td>2.05</td>
<td>2.08</td>
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<td></td>
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<td>(1.69)</td>
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<td>-3.31</td>
<td>1.91</td>
<td>-5.84*</td>
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<td></td>
<td>(7.28)</td>
<td>(1.92)</td>
<td>(2.89)</td>
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<td>-0.97</td>
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<td>(4.44)</td>
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<td>Type of site (baseline = urban)</td>
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<td></td>
<td>(6.23)</td>
<td>(1.87)</td>
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<td>(6.36)</td>
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<td>(1.12)</td>
<td>(1.45)</td>
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<td></td>
<td>(79.90)</td>
<td>(11.61)</td>
<td>(47.03)</td>
<td>(45.97)</td>
</tr>
</tbody>
</table>

*Note.* Standard errors are in parentheses. For all independent variables, a coding of “1” was used at the reference group.

<sup>a</sup>Wealth index was centered prior to analyses.

*<sup>p</sup> < .05. **<sup>p</sup> < .01. ***<sup>p</sup> < .001.*
### Table 6

**Hierarchical Linear Model of Predictors of Math Ability**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Ethiopia</th>
<th>Peru</th>
<th>Vietnam</th>
<th>India</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fixed effects</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Intercept</td>
<td>7.66***</td>
<td>13.65***</td>
<td>18.09***</td>
<td>10.23***</td>
</tr>
<tr>
<td></td>
<td>(0.76)</td>
<td>(0.78)</td>
<td>(1.53)</td>
<td>(1.20)</td>
</tr>
<tr>
<td>School enrollment (baseline = yes)</td>
<td>1.14*</td>
<td>4.40***</td>
<td>5.69***</td>
<td>4.05***</td>
</tr>
<tr>
<td></td>
<td>(0.59)</td>
<td>(0.81)</td>
<td>(0.57)</td>
<td>(0.62)</td>
</tr>
<tr>
<td>Social program involvement</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(baseline = yes)</td>
<td>1.17***</td>
<td>0.85*</td>
<td>0.40</td>
<td>1.40**</td>
</tr>
<tr>
<td></td>
<td>(0.32)</td>
<td>(0.40)</td>
<td>(0.46)</td>
<td>(0.53)</td>
</tr>
<tr>
<td>Unpaid work (baseline = yes)</td>
<td>1.00</td>
<td>-1.18</td>
<td>-0.58</td>
<td>-2.37***</td>
</tr>
<tr>
<td></td>
<td>(1.07)</td>
<td>(0.66)</td>
<td>(0.78)</td>
<td>(0.47)</td>
</tr>
<tr>
<td>Paid work (baseline = yes)</td>
<td>-0.49</td>
<td>-0.74</td>
<td>-0.79</td>
<td>-0.87</td>
</tr>
<tr>
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<td>(0.54)</td>
<td>(0.64)</td>
<td>(0.90)</td>
<td>(0.77)</td>
</tr>
<tr>
<td>Type of site (baseline = urban)</td>
<td>1.78*</td>
<td>1.60**</td>
<td>-0.21</td>
<td>-0.67</td>
</tr>
<tr>
<td></td>
<td>(0.71)</td>
<td>(0.63)</td>
<td>(1.29)</td>
<td>(0.93)</td>
</tr>
<tr>
<td>Sex (baseline = males)</td>
<td>1.34***</td>
<td>0.17</td>
<td>-1.15**</td>
<td>1.74***</td>
</tr>
<tr>
<td></td>
<td>(0.29)</td>
<td>(0.38)</td>
<td>(0.40)</td>
<td>(0.38)</td>
</tr>
<tr>
<td>Wealth index(^a)</td>
<td>5.47***</td>
<td>5.91***</td>
<td>8.13***</td>
<td>10.18***</td>
</tr>
<tr>
<td></td>
<td>(1.30)</td>
<td>(1.39)</td>
<td>(1.52)</td>
<td>(1.31)</td>
</tr>
<tr>
<td>Random parameters</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Intercept</td>
<td>1.96</td>
<td>2.26</td>
<td>6.17</td>
<td>2.28</td>
</tr>
<tr>
<td></td>
<td>(0.79)</td>
<td>(0.97)</td>
<td>(2.40)</td>
<td>(0.97)</td>
</tr>
</tbody>
</table>

*Note.* Standard errors are in parentheses. For all independent variables, a coding of “1” was used at the reference group.

\(^a\)Wealth index was centered prior to analyses.

\(^*p < .05. \ **p < .01. \ ***p < .001.*
### Table 7

**Hierarchical Linear Model of Predictors of Reading Comprehension**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Ethiopia</th>
<th>Peru</th>
<th>Vietnam</th>
<th>India</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Fixed effects</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Intercept</td>
<td>6.48***</td>
<td>15.45***</td>
<td>18.82***</td>
<td>10.64***</td>
</tr>
<tr>
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<td>(0.79)</td>
<td>(0.80)</td>
<td>(0.97)</td>
<td>(1.24)</td>
</tr>
<tr>
<td>School enrollment (baseline = yes)</td>
<td>1.11*</td>
<td>2.51**</td>
<td>3.21***</td>
<td>4.80***</td>
</tr>
<tr>
<td></td>
<td>(0.52)</td>
<td>(0.78)</td>
<td>(0.41)</td>
<td>(0.70)</td>
</tr>
<tr>
<td>Social program involvement (baseline = yes)</td>
<td>1.04***</td>
<td>0.66</td>
<td>0.36</td>
<td>1.28*</td>
</tr>
<tr>
<td></td>
<td>(0.27)</td>
<td>(0.38)</td>
<td>(0.33)</td>
<td>(0.57)</td>
</tr>
<tr>
<td>Unpaid work (baseline = yes)</td>
<td>0.05</td>
<td>-0.71</td>
<td>0.51</td>
<td>-1.40**</td>
</tr>
<tr>
<td></td>
<td>(0.91)</td>
<td>(0.63)</td>
<td>(0.56)</td>
<td>(0.51)</td>
</tr>
<tr>
<td>Paid work (baseline = yes)</td>
<td>0.08</td>
<td>-0.16</td>
<td>-0.07</td>
<td>0.34</td>
</tr>
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<td></td>
<td>(0.48)</td>
<td>(0.62)</td>
<td>(0.64)</td>
<td>(0.86)</td>
</tr>
<tr>
<td>Type of site (baseline = urban)</td>
<td>2.13**</td>
<td>3.14***</td>
<td>-0.51</td>
<td>-2.69**</td>
</tr>
<tr>
<td></td>
<td>(0.78)</td>
<td>(0.62)</td>
<td>(0.76)</td>
<td>(0.85)</td>
</tr>
<tr>
<td>Sex (baseline = males)</td>
<td>0.33</td>
<td>-0.31</td>
<td>-1.09**</td>
<td>1.30**</td>
</tr>
<tr>
<td></td>
<td>(0.25)</td>
<td>(0.37)</td>
<td>(0.28)</td>
<td>(0.42)</td>
</tr>
<tr>
<td>Wealth index(^a)</td>
<td>4.22**</td>
<td>6.19***</td>
<td>5.90***</td>
<td>8.91***</td>
</tr>
<tr>
<td></td>
<td>(1.12)</td>
<td>(1.36)</td>
<td>(1.06)</td>
<td>(1.42)</td>
</tr>
<tr>
<td><strong>Random parameters</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Intercept</td>
<td>3.35</td>
<td>3.49</td>
<td>1.69</td>
<td>1.54</td>
</tr>
<tr>
<td></td>
<td>(1.24)</td>
<td>(1.42)</td>
<td>(0.72)</td>
<td>(0.78)</td>
</tr>
</tbody>
</table>

*Note.* Standard errors are in parentheses. For all independent variables, a coding of “1” was used at the reference group.

\(^a\)Wealth index was centered prior to analyses.

\(^*p < .05. \ **p < .01. \ ***p < .001.*
### Table 8

**Hierarchical Linear Model of Predictors of Self-efficacy**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Ethiopia</th>
<th>Peru</th>
<th>Vietnam</th>
<th>India</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Fixed effects</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Intercept</td>
<td>4.00***</td>
<td>3.70***</td>
<td>3.66***</td>
<td>4.02***</td>
</tr>
<tr>
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<td>(0.07)</td>
<td>(0.05)</td>
<td>(0.08)</td>
<td>(0.09)</td>
</tr>
<tr>
<td>School enrollment (baseline = yes)</td>
<td>0.10**</td>
<td>-0.10</td>
<td>0.28***</td>
<td>0.33***</td>
</tr>
<tr>
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<td>(0.06)</td>
<td>(0.06)</td>
<td>(0.04)</td>
<td>(0.05)</td>
</tr>
<tr>
<td>Social program involvement (baseline = yes)</td>
<td>0.09**</td>
<td>0.06*</td>
<td>0.03</td>
<td>0.08*</td>
</tr>
<tr>
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<td>(0.03)</td>
<td>(0.03)</td>
<td>(0.03)</td>
<td>(0.04)</td>
</tr>
<tr>
<td>Unpaid work (baseline = yes)</td>
<td>-0.08</td>
<td>-0.05</td>
<td>-0.11*</td>
<td>-0.12**</td>
</tr>
<tr>
<td></td>
<td>(0.11)</td>
<td>(0.05)</td>
<td>(0.05)</td>
<td>(0.04)</td>
</tr>
<tr>
<td>Paid work (baseline = yes)</td>
<td>0.03</td>
<td>-0.00</td>
<td>-0.07</td>
<td>0.11*</td>
</tr>
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<td>(0.05)</td>
<td>(0.05)</td>
<td>(0.06)</td>
<td>(0.05)</td>
</tr>
<tr>
<td>Type of site (baseline = urban)</td>
<td>0.11**</td>
<td>0.07</td>
<td>-0.02</td>
<td>0.08</td>
</tr>
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<td>(0.04)</td>
<td>(0.05)</td>
<td>(0.07)</td>
</tr>
<tr>
<td>Sex (baseline = males)</td>
<td>0.06**</td>
<td>-0.12***</td>
<td>-0.00</td>
<td>0.04</td>
</tr>
<tr>
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<td>(0.03)</td>
<td>(0.03)</td>
<td>(0.03)</td>
<td>(0.03)</td>
</tr>
<tr>
<td>Wealth index&lt;sup&gt;a&lt;/sup&gt;</td>
<td>0.19</td>
<td>0.23**</td>
<td>0.19*</td>
<td>0.05*</td>
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<tr>
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<td>(0.13)</td>
<td>(0.09)</td>
<td>(0.09)</td>
<td>(0.10)</td>
</tr>
<tr>
<td><strong>Random parameters</strong></td>
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<td>Intercept</td>
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<td>0.00</td>
<td>0.01</td>
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<td>(0.00)</td>
<td>(0.00)</td>
<td>(0.00)</td>
<td>(0.01)</td>
</tr>
</tbody>
</table>

*Note. Standard errors are in parentheses. For all independent variables, a coding of “1” was used at the reference group.

<sup>a</sup>Wealth index was centered prior to analyses.

*<sup>p</sup> < .05. **<sup>p</sup> < .01. ***<sup>p</sup> < .001.
Table 9

Hierarchical Linear Model of Predictors of Educational Aspiration

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Ethiopia</th>
<th>Peru</th>
<th>Vietnam</th>
<th>India</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fixed effects</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Intercept</td>
<td>13.57***</td>
<td>15.59***</td>
<td>15.40***</td>
<td>14.21***</td>
</tr>
<tr>
<td>(0.34)</td>
<td>(0.25)</td>
<td>(0.47)</td>
<td>(0.54)</td>
<td></td>
</tr>
<tr>
<td>School enrollment (baseline = yes)</td>
<td>2.27***</td>
<td>2.27***</td>
<td>3.46***</td>
<td>3.99***</td>
</tr>
<tr>
<td>(0.26)</td>
<td>(0.28)</td>
<td>(0.22)</td>
<td>(0.31)</td>
<td></td>
</tr>
<tr>
<td>Social program involvement (baseline = yes)</td>
<td>0.11</td>
<td>0.39**</td>
<td>0.51**</td>
<td>0.16</td>
</tr>
<tr>
<td>(0.14)</td>
<td>(0.14)</td>
<td>(0.18)</td>
<td>(0.28)</td>
<td></td>
</tr>
<tr>
<td>Unpaid work (baseline = yes)</td>
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<td>0.35</td>
<td>0.44</td>
<td>0.01</td>
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<td>(0.49)</td>
<td>(0.22)</td>
<td>(0.31)</td>
<td>(0.24)</td>
<td></td>
</tr>
<tr>
<td>Paid work (baseline = yes)</td>
<td>-0.17</td>
<td>-0.31</td>
<td>0.12</td>
<td>-0.89**</td>
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<td>(0.35)</td>
<td>(0.37)</td>
<td></td>
</tr>
<tr>
<td>Type of site (baseline = urban)</td>
<td>0.27</td>
<td>0.11</td>
<td>-0.26</td>
<td>-0.19</td>
</tr>
<tr>
<td>(0.33)</td>
<td>(0.20)</td>
<td>(0.32)</td>
<td>(0.35)</td>
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</tr>
<tr>
<td>Sex (baseline = males)</td>
<td>0.32**</td>
<td>-0.13</td>
<td>-0.32**</td>
<td>0.28</td>
</tr>
<tr>
<td>(0.13)</td>
<td>(0.13)</td>
<td>(0.16)</td>
<td>(0.20)</td>
<td></td>
</tr>
<tr>
<td>Wealth index&lt;sup&gt;a&lt;/sup&gt;</td>
<td>0.79</td>
<td>2.04***</td>
<td>3.12***</td>
<td>2.04**</td>
</tr>
<tr>
<td>(0.59)</td>
<td>(0.46)</td>
<td>(0.55)</td>
<td>(0.68)</td>
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</tr>
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<td></td>
</tr>
<tr>
<td>Intercept</td>
<td>0.43</td>
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<td>0.19</td>
</tr>
<tr>
<td>(0.17)</td>
<td>(0.06)</td>
<td>(0.10)</td>
<td>(0.13)</td>
<td></td>
</tr>
</tbody>
</table>

<sup>Note.</sup> Standard errors are in parentheses. For all independent variables, a coding of “1” was used at the reference group.<br><sup>a</sup>Wealth index was centered prior to analyses.<br>∗<i>p < .05</i>.  **<i>p < .01</i>.  ***<i>p < .001</i>.  


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