THE EFFECTS OF COMMUNITY FACTORS ON SCHOOL PARTICIPATION IN TURKEY: A MULTILEVEL ANALYSIS

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ABSTRACT

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By using a recent, large-scale, and nationally representative data set, this study aims to explore the factors associated with school participation at both the primary and secondary levels in Turkey, with specific attention to the community-level factors. The school participation of children at both levels has been a prominent problem in Turkey, similar to many other developing countries. Therefore, numerous studies have been conducted to determine the factors associated with the school participation of boys and girls so far. Existing studies in Turkey, however, have extensively focused on the association between household-level factors and school participation, ignoring the role of the broader environment in which children live. This study, therefore, makes an important contribution to the current school participation literature in Turkey by taking socio-economic context variables into account with the multilevel modeling method. The findings highlight the importance of community/context factors in explaining school participation in Turkey. The results of the study can help policy makers develop a systematic understanding of the relationship between socio-economic context and school participation, and make more appropriate decisions for improving school participation across the country.

With respect to the household level factors, the results are in line with the previous literature on the relationship between household-level factors and the school participation of children in Turkey. I find that the mother's ability to speak Turkish and the household head's education are positively associated with school participation, while being female, being older,

mothers' traditional gender role attitudes, household poverty, and residing in a large household are negatively associated with school participation. The results of the multilevel analyses, which are the key contribution of this study, show that the school participation of children in Turkey significantly varies between communities, but only for children aged 14–17. Specific community-level variables such as average adult education and the average gender role attitudes in the community, which I use as a proxy for social context, are found to be significantly associated with school participation, while economic variables, such as community poverty and urbanization, are not significantly associated with school participation. These results also mostly align with the results of existing studies in other developing countries and confirm the importance of social context in which children live for their educational involvement.

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CHAPTER 1

INTRODUCTION

1.1.Purpose of the Study

This study's purpose is to explore the factors associated with school participation at both the primary and secondary levels in Turkey, with specific attention to community-level factors, which have received limited attention so far in the Turkish literature. Using recent, large-scale, and nationally representative data, this study makes an important contribution to the current education policy conversations in Turkey.

Turkey has been decisively working to be a participant in democratic western modernization since the Republic of Turkey was established in 1923. The start of membership negotiations with the European Union (EU) in 2005 can be seen as one of the biggest indicators of Turkey's effort to achieve this aim after the establishment of the republic. In addition, this event was an important milestone in Turkey's long-running relationship with the EU and it implies that Turkey has made major strides in many different economic and social areas in recent years. However, it should be noted that Turkey still experiences significant issues in its education sector, especially regarding access to education. To illustrate, Turkey has a very high level of adult illiteracy and a low level of primary and secondary school participation, even compared to the least developed European countries in its region (UNESCO, 2011). At this point, it can be safely claimed that Turkey's continued growth and development require a more highly educated population, because education is considered an essential element of socio-economic development (Hanushek & Woessmann, 2008; Lockheed, Bloch, Hamilton, & Vespoor, 1990; Psacharopoulos & Patrinos, 2002).

There is a robust literature which empirically demonstrates the significant returns to education at both individual and societal levels. In terms of economic returns, the literature suggests a strong positive relationship between the level of education which individuals attain and their individual earnings, as well as the economic growth of their countries (Cohen & Soto, 2007; De la Fuente & Doménech, 2006; Hanushek & Kimko, 2000; Krueger & Lindahl, 2001; Psacharopoulos, 1994; Psacharopoulos & Patrinos, 2002; Tansel, 2004). It is also argued that there is a considerable social return to education because of its many positive impacts on social life, such as reducing crime rates, improving health, and promoting civic participation (Dee, 2004; Wolfe & Haveman, 2002). Therefore, the strong evidence on the positive returns to education at both individual and societal levels has motivated many governments to invest more in education (Hanushek, 2003). While most developed countries are currently discussing how to raise the quality of education, providing basic education to all, regardless of geographic location or socio-economic background, is still a main target in many developing countries (Tansel, 2004).

The international community also views basic education as a necessary prerequisite for children in developing countries. In this respect, the international initiative "Education for All" (EFA) was launched in 1990 in Jomtien, Thailand, with the aim of helping developing countries provide at least a basic education to all members of their society. In accordance with this aim, six education goals were generated by a diverse group of national governments, non-governmental organizations, and international agencies. Two of these six EFA goals are committed to increasing the school participation of children all over the world by ensuring universal primary education and eliminating gender disparity at both primary and secondary education levels.

These goals¹ are:

Goal 2) to "ensure that by 2015 all children, particularly girls in difficult circumstances and belonging to ethnic minorities, have access to and complete free and compulsory primary education of good quality" and,

Goal 5) to "eliminate gender disparities in primary and secondary education by 2005 and achieve gender equality in education by 2015 with a focus on ensuring girls' full and equal access to and achievement in basic education of good quality."

Although both national governments and many international agencies have been working diligently to increase access to education, millions of children still do not attend primary or secondary school in developing countries. Even at the primary level, there was a total of 72 million out-of-school children in 2007 around the world. Turkey has also struggled with providing basic education to all, with approximately 640,000 out-of-school children at primary school level in 2007 (UNESCO, 2010). According to trend analysis, although the number of out-of-school children will significantly decline in Turkey, there will still be around 340,000 primary school-aged children not in school in 2015 (UNESCO, 2011). Thus, Turkey is considered to be one of the few higher-income countries which may not achieve universal primary education by 2015. At the secondary level, school participation is even a bigger problem in Turkey because around one-third of all secondary school aged children are not enrolled in school (UNESCO, 2010; MoNE, 2010).

It is clear that the school participation of children at both primary and secondary education levels is still a prominent problem in Turkey and many other developing countries. In this context, as a first step, determining the factors that are associated with the school

¹<u>http://web.worldbank.org/WBSITE/EXTERNAL/TOPICS/EXTEDUCATION/0,,contentMDK:</u> 20374062~menuPK:540090~pagePK:148956~piPK:216618~theSitePK:282386,00.html

participation of children plays a key role in providing formal education opportunities to every child in every society. Hence, numerous studies have been conducted to determine the factors associated with the school participation of boys and girls in developing countries. Among the three key factors of school, family, and community, which might affect children's educational attainment, existing studies extensively focus on the importance of family and school characteristics (Bramley & Karley, 2007; Buchmann & Hannum, 2001; Govinda & Bandyopadhyay, 2010; Nechyba, McEwan, & Older-Aguilar, 1999). Many studies from developing countries, for example, have investigated the association between various householdlevel factors, such as household wealth, household size, and parental education, and the school participation of children in these households (Anh, Knodel, Lam, & Friedman, 1998; Chudgar, 2009; Connelly & Zheng, 2003; Huisman & Smits, 2009a; Knodel, Havanon, & Sittitrai, 1990; Pong, 1997; Sudha, 1997). Similarly, there are several studies that have investigated the factors associated with educational attainment in Turkey, with specific interest in the effects of family characteristics (Bakis, Levent, Insel, & Polat, 2009; Dayioglu, Kirdar, & Tansel, 2009; Duman, 2010; Goksel, 2008; Hisarciklilar, 2002; Koc, 2008; Smits & Gunduz-Hosgor, 2006; Tansel, 2002; Tomul, 2008).

The effects of community factors on school participation, however, have not yet been substantially explored (Buchmann & Hannum, 2001; Chudgar, 2006b; Chudgar & Shafiq, 2010; Duncan, 1994), either in Turkey or in other developing countries, although there is a growing interest in this subject. Several recent studies suggest that there is a significant relationship between the community where children live and their educational outcomes, even after controlling for household-level characteristics (Adams, 2006). Studies in developing countries (e.g., China, India, and Mexico) show that several community-level factors, such as average

income, children's overall school enrollment, and average educational attainment of adults, are strongly associated with schooling desire or the actual school participation of children (Adams & Hannum, 2005; Binder, 1999; Chudgar, 2008; Chudgar & Shafiq, 2010; Connelly & Zheng, 2003). There is not, however, any study that exclusively investigates the effects of community factors on school participation of children in Turkey, to my knowledge. Only Tansel (2002) has used, in addition to household-level variables, a few community-level explanatory variables such as the development of streets, distance to regional metro centers, and local employment composition, to predict the impact of context on school participation in Turkey. However, these variables are mostly provincial-level indicators (except development of streets) and may not truly represent the effect of the community.

In sum, the school participation of children at both the primary and secondary levels is still an undeniable problem in Turkey. Similar to the current situation in Turkey, millions of school-aged children do not participate in formal education around the world. There have been many studies investigating the factors that contribute to this situation in different developing countries, with special attention to the household-level factors. The existing literature, however, suggests that the effects of community factors on school participation in developing countries are also likely important, but not well researched and understood. In Turkey, there is also an important gap in the literature on the relationship between the community in which children live and their school participation. My aim, therefore, is to analyze the association between community-level factors and the school participation of children in Turkey by using both socio-cultural (e.g., level of adult education in the community) and economic (e.g., level of poverty in the community) community-level variables. My specific research questions are: 1) What is the current pattern of school participation at the primary and secondary levels in Turkey? 2) Are

community level factors significantly associated with school participation in Turkey, after controlling for individual- and household-level factors?

Answering these questions can make an important contribution to the school participation literature in Turkey by depicting the current situation and by revealing the role of communitylevel factors, which has been ignored so far. This study can also help policy makers develop a systematic understanding of the relationship between social context and school participation, and make more appropriate decisions for improving school participation across the country.

The following section provides detailed information about Turkey, with a specific focus on regional differences, the Turkish education system, and the current school participation problem in Turkey, to give the reader an understanding of the background context.

1.2.Background of Turkey

The Turkish Republic was founded in 1923, following the fall of the Ottoman Empire. After the establishment of the republic, some of the long-held cultural, social, and religious traditions of the empire were prohibited. Meanwhile, numerous economic, legal, and social reforms were implemented in the first two decades of the new republic, with the aim of modernizing the nation through the adoption of secularism and democracy. Since education was seen as a key tool in this modernization process, substantial changes in the educational sector were also introduced. These changes included making primary education compulsory and adopting Roman alphabets to replace Arabic scripts (Hacettepe University Institute of Population Studies, 2009; Kaya, 2004). Since the beginning of the republic, there have also been continued efforts to increase access to education among different social groups in the society. Although significant improvements have been made, a low level of educational attainment is still an important problem in Turkey. In addition, people who live in less developed parts of the country suffer more from this problem because of both low socio-economic development and traditional cultural norms.

Turkey is geographically positioned between Asia and Europe. Its geographic position also reflects the culture and values of the people who live in the country. Hence, diverse cultural, educational, social, and economic situations can be observed in different parts of Turkey. The western portion of the country, which is surrounded by European countries, mostly adopted western values, while much of the population in the east, where Turkey has its borders with Middle Eastern countries such as Iran, Iraq, and Syria, still generally holds to traditional beliefs and attitudes. The same difference can also be observed between people who live in metropolitan cities and people who live in rural settlements. It should also be noted that patriarchal ideology is still dominant in social life, especially in less developed parts of the country, although gender equality is protected by law (Hacettepe University Institute of Population Studies, 2004; Kaya, 2004; Smits & Gunduz-Hosgor, 2006).

1.2.1. Regional Characteristics of Turkey

Turkey has seven geographic regions, which were formed based on their climate, location, agricultural products, and so on, but they do not represent an administrative division. These regions were named Marmara, Aegean, Mediterranean, Black Sea, Central Anatolia, Eastern Anatolia, and Southeastern Anatolia according to their geographic location.² Turkey also has 81 administrative divisions (provinces), which are further divided into districts, subdivisions, and villages (Hacettepe University Institute of Population Studies, 2009).

²<u>http://www.worldturkey.com/lang/eng/regions.php</u>

Figure 1.1: Geographical regions of Turkey³



In addition to the geographic breakdown, Turkey is also divided into five main regions (West, South, East, North, and Central) in the literature based on socioeconomic differences and the demographic structure of the country. Social surveys generally use these five main regions for sampling purposes (Hacettepe University Institute of Population Studies, 2009).

The West of Turkey consists of the country's two well-developed geographic regions, Marmara and Aegean, and includes the country's largest city, Istanbul. While the Aegean coast holds a significant role for producing and exporting important crops, the northwestern part of the region is known as the center of the financial activities in the country. As a result of the region's importance for the country's economic development, most of the infrastructure of roads and schools was built earlier in this region compared to other regions. The region, however, shows an important diversity regarding the demographic structure and socio-economic status of its inhabitants, especially in metropolitan cities, since many people from less developed regions of the country have migrated to this region for socio-economic reasons during the last several

³For interpretation of the references to color in this and all other figures, the reader is referred to the electronic version of this dissertation.

decades. In terms of school participation, there are relatively higher participation rates for both boys and girls in the West, partly because of the better infrastructure, the higher need for educated workforce, and the weaker impact of traditional social norms in the region (Gündüz-Hosgör & Smits, 2007; Hacettepe University Institute of Population Studies, 2009; Smits & Gunduz-Hosgor, 2006).

The South also has some fertile agricultural areas and manufacturing sector similar to those of the West. In addition, one of the biggest economic sectors in the area is the tourism industry along the coastline, including Antalya, which provides a significant proportion of the country's tourism revenue. The South is also mostly urbanized, like the West, but inner parts of the region are not as developed as the coastline. Because of booming industrial activities and tourism sector, this region has also witnessed increased in-migration from the relatively less developed regions, especially during the last two decades. As in the West, a higher level of school participation for both boys and girls is also expected in this region, since the region experiences relatively high level of economic development and urbanization (Gündüz-Hosgör & Smits, 2007; Hacettepe University Institute of Population Studies, 2009; Smits & Gunduz-Hosgor, 2006).

Central Turkey has witnessed recent development in several industrial sectors, such as furniture and marble, although industry is not well developed compared to the West. Agriculture is also relatively less developed in this region, mostly because of the unfavorable climate and geographic restrictions. Ankara, the capital city of Turkey, makes the biggest contribution to the region, as a city where many governmental activities take place. Ankara also plays a significant role in the social development of the region, as it has some of the best public and private universities of Turkey. Although the region, especially the countryside, might be categorized as underdeveloped compared to the West and the South, the average socio-economic development and educational infrastructures are better than in the East and the North, mostly because of the capital city of Ankara. In general, a moderate level of school participation is expected in this region (Gündüz-Hosgör & Smits, 2007; Hacettepe University Institute of Population Studies, 2009; Smits & Gunduz-Hosgor, 2006).

The North region is known for its important agricultural products, such as hazelnut and tea. The fertile areas of the region, however, are mostly located along the coastline and isolated from the rest of the country because of high mountains and intensive forests. While industrial activities are growing in some western provinces of this region, industry is not well developed and traditional methods are used for agriculture due to the geographic restrictions in the northeastern part. Since males generally tend to out-migrate or not work on lands in the region, women are mostly charged with agricultural work. The North region, therefore, has the highest rate of female employment among all regions of Turkey. Relatively higher school participation is expected for girls in the region because of women's more independent position (Gündüz-Hosgör & Smits, 2007; Hacettepe University Institute of Population Studies, 2009; Smits & Gunduz-Hosgor, 2006).

The East of Turkey geographically consists of the Eastern and Southeastern Anatolia regions. The overall socio-economic development of the region is considerably low compared to the rest of the country. Furthermore, there are many hardships in the region related to the climate and geographical circumstances. Therefore, agricultural activities are not common and the mechanization in agriculture is very low, although most of the people are living in rural areas in the region. However, some agricultural development has appeared recently with the "Southeast Anatolia Project," especially in the southern part. Industrial activities are also very limited and

do not have a prominent impact on the economy. In terms of social life, tribal structure and traditional patriarchal norms still somewhat maintain their influence in the region. It is also noteworthy that the region has experienced high levels of internal and external migration from rural areas to the larger cities, mostly because of socio-economic restrictions and terrorist activities during the last two decades. In the East region, the school participation rate is very low, especially for girls, partly because of the current socio-economic condition and the patriarchal cultural norms and beliefs in the region (Gündüz-Hosgör & Smits, 2007; Hacettepe University Institute of Population Studies, 2009; Smits & Gunduz-Hosgor, 2006).

1.2.2. Socio-economic and Cultural Differences between Regions

There are extensive differences among the regions of Turkey in terms of many socioeconomic indicators (Gündüz-Hosgör & Smits, 2007). In general, lesser development levels have been found in existing empirical studies regarding educational, health, and economic matters in moving from western to eastern provinces (Gedik, Sahin, & Suer, 2002; Gezici & Hewings, 2007; Gezici & Keskin, 2005; Gündüz-Hosgör & Smits, 2007; Tomul, 2007; Unal, 2008). To illustrate, most of the eastern provinces are significantly disadvantaged in terms of literacy rates and schooling ratios compared to the western provinces. In addition, higher fertility rates and larger households have been observed in eastern provinces (Gedik, et al., 2002). In terms of the relationship between location and economic development, it can be argued that the coastal provinces of the West and the South are the most prosperous provinces of the country. In contrast to the provinces on the western and southern coasts, many provinces on the north coast can be defined as underdeveloped, as can almost all the provinces of the East and some of the provinces of the Central region (Gezici & Hewings, 2007; Gezici & Keskin, 2005).

The regions of Turkey also show great differences in terms of traditional gender role

attitudes and the status of women. For example, 41 percent of the women have five or more children in the countryside of the East, while only 12 percent of the women in the countryside of the West experience the same situation (Gündüz-Hosgör & Smits, 2007). In terms of employment, the 2008 Turkey Demographic Health Survey (TDHS) main report indicated that 30.7 percent of all women (age 15–49countrywide) reported being currently employed at the time of the survey. While the North had the highest employment ratio, 53.0 percent, the East had the lowest ratio of 19.9 percent, and the other three regions had employment ratios around 30 percent (Hacettepe University Institute of Population Studies, 2009). Furthermore, women in the East region may experience additional disadvantages because a high number of women in the region are not able to speak the official language of the country, Turkish, and some women even do not have a civil marriage.⁴ It was also found that the percentages of women who accept traditional gender roles are much higher in the East region compared to the West region (Gündüz-Hosgör & Smits, 2007).

1.2.3. The Educational System and Educational Attainment in Turkey

The Turkish education system includes the pre-primary, primary, secondary, and higher education levels. Primary education included five years of elementary (for children aged 6–11) and three years of middle (aged 12–14) schooling before 1997, and just the first five years were compulsory for every child in the country at that time. In 1997, however, the elementary and middle schools were combined and compulsory education was extended from five to eight years for all children whose ages fell between 6 and 14. Starting in 1997/1998, middle schools stopped accepting new students for education and primary schools became eight years. With a recent

⁴Those who do not have a civil marriage generally have religious marriage, which is not officially accepted in Turkey.

educational reform in May 2012, primary schools were again divided into elementary and middle schools. Each of these levels includes four years of education. Secondary education included at least three years of high school before 2005. Beginning with the 2005/2006 school year, the minimum length of secondary education was gradually extended to four years. Today, secondary education is considered to last for a period of four years regardless of where in the country you live (MoNE, 2010). The recent education reform that is mentioned above also made the four years of secondary education compulsory for all boys and girls, making the total of compulsory education 12 years in Turkey.

As previously mentioned, eight years of primary education has been compulsory for more than a decade, and both primary and secondary schooling are free in public schools in Turkey. However, there are still thousands of out-of-school children at both levels, mostly because of high regional disparities and gender inequalities. According to the most recent EFA report, Turkey is one of the few higher-income countries that may not achieve universal primary education by 2015. In Turkey, approximately 640,000 primary school-aged children were out of school in 2007. The profile of out-of-school children in Turkey also seems quite problematic, because more than half of these children are unlikely to enter school later. Furthermore, secondary school participation is fairly low in certain regions and among girls (UNESCO, 2010).

School enrollment patterns in Turkey can be seen in Table 1.1, which shows the net enrollment rates and sex ratios⁵ since 2000 (MoNE, 2010). Although there have been significant increases in enrollment rates and sex ratios at both primary and secondary levels during the last couple of years, the un-enrollment problem has not been fully eliminated. From 2000 to 2009, the net enrollment has increased from 95.28 percent to 98.17 percent at the primary level and

⁵It is obtained by dividing the female gross schooling ratio by the male gross schooling ratio multiplied by 100.

from 43.95 percent to 64.95 percent at the secondary level. Similarly, sex ratios have increased from 89.64 percent to 98.91 percent at the primary level and from 74.41 percent to 88.59 percent at the secondary level.

Net Enrollment Rates		Sex Ratios		
Year	Primary *	Secondary	Primary *	Secondary
	education	education	education	education
2000/'01	95.28	43.95	89.64	74.41
2001/'02	92.40	48.11	90.71	75.87
2002/'03	90.98	50.57	91.10	72.32
2003/'04	90.21	53.37	91.86	78.01
2004/'05	89.66	54.87	92.33	78.72
2005/'06	89.77	56.63	93.33	78.76
2006/'07	90.13	56.51	94.11	79.65
2007/'08	97.37	58.56	96.39	85.81
2008/'09	96.49	58.52	97.91	88.99
2009/'10	98.17	64.95	98.91	88.59

Table 1.1: Net enrollment rates and sex ratios

Source: Ministry of National Education, (2010)

Grade 1-8

Grade 9–11 until 2008–2009 and grade 9–12 after that (Only students who started high school after 2005 had to study four years)

1.2.4. Regional Differences in Educational Attainment

In addition to the high number of out-of-school children in Turkey, there are also significant inequalities regarding average educational attainment between different regions. In general, average years of schooling (AYS) for both males and females are higher, and the gap between the two genders is lower in the West and the South. In contrast, AYS for both males and females in the East of Turkey are relatively lower, and the gap between the two genders is higher (Tomul, 2007). More specifically, while 21 percent of people (age 17 to 22) have less than four years of education in the eastern part of the country, this is the case for only 2to 7 percent of the same age group in other regions (UNESCO, 2010). Female education also shows great disparities across the regions of the country. Overall, one in every five women has no education

or has not completed the first level of primary school in Turkey. However, more than half of women who live in the East have no education or have not completed first level primary school, while just around one in every seven women experience the same situation in the West (Hacettepe University Institute of Population Studies, 2004). It has also been found that the educational level of married men is fairly higher than the educational level of their wives in all regions of the country. As expected, the difference is the lowest in the West and the highest in the East (Gündüz-Hosgör & Smits, 2007).

The current situation in the school participation of boys and girls in the country also reflects the situation regarding regional differences in average educational attainment. At all levels, there is higher school participation for both boys and girls in the West, and lower participation in the East and several provinces in Central Turkey. According to statistics from the Ministry of National Education (MoNE), the general net enrollment ratio was 98 percent for primary schooling and 65 percent for secondary schooling at the beginning of the 2009/2010 educational year. However, there are still several cities in the Central and the East that have around 90 percent of primary enrollment, such as Yozgat (90), Cankiri (89), Hakkari (90), Bitlis (94), etc. The situation is much worse in terms of the secondary education enrollment ratios because there are several cities, all of them located in the East, that have even lower than a 40 percent enrollment ratio, such as Agri (27), Van (33), Mus (28), Bitlis (34), Sanliurfa (32), Sirnak (34), and Siirt (38).

There is also no doubt that gender disparity in school participation is a distinctive reality and shows significant differences between different regions of the country. Turkey has the lowest gender parity index (ratio of girls to boys in school) at the secondary level, and the second lowest gender parity index at the primary level, among 19 countries in Central and Eastern Europe (UNESCO, 2011). In Turkey, around 60 percent of out-of-school children at the primary school level are girls, compared a world average of 54 percent. Between the ages of 8 and 12, 7 percent of girls do not enroll in school, while this is the case for only 2 percent of boys. Furthermore, this gap becomes much wider at the secondary level. Particular regions also show greater gender disparities in school participation. While girls and boys enjoy equal rates of enrollment at the primary level and are beginning to reach that parity at the secondary level in the western half of the country, the eastern part of Turkey has experienced high gender inequality in school participation, especially at the secondary level. In eastern Turkey, for example, the percentage of girls' enrollment rates to boys' is highest at age 9 (85 percent), while it drops below 40 percent by age 15. This situation is even worse in rural areas of the region, since less than 20 percent of 15 years old girls are enrolled in school (UNESCO, 2010).

In terms of the actual enrollment rates, according to MoNE, the overall sex ratios for student enrollment were .98 for primary schooling and .88 for secondary schooling in the 2009/2010 educational year for the country. According to these results, it seems that gender disparity was almost eliminated at the primary school level for most parts of the country, except several eastern provinces. At the secondary level, however, big disparities between girls and boys still exist, with the greater inequality in the East. For example, sex ratios of secondary school enrollment rates in several eastern provinces were .57 (Mus), .56 (Bitlis), .62 (Sanliurfa), and .57 (Siirt) at the beginning of the 2009/2010 educational year. When considering the fact that the general enrollment rates were also very low in most of the same provinces, the actual enrollment rates of girls were significantly low in these provinces (MoNE, 2010).

In sum, Turkey has great socio-cultural and economic diversities between and within its regions. In addition, the educational attainment of adults and school participation of children

show great differences between Turkish regions. While there are generally higher rates of school participation for both girls and boys in western provinces, eastern provinces experience lower school participation in general and higher gaps between girls' and boys' schooling. Because of the regional diversity that exists within the country, Turkey serves as a very suitable place to investigate the effect of community-level socio-cultural and economic factors on the school participation of children.

In the remaining chapters I now turn to systematically investigating the importance of community factors for school participation in Turkey. In the next chapter, I provide a review of related theoretical and empirical literature in other developing countries. I also summarize the findings of existing studies that investigate the relationship between household factors and school participation in Turkey. In the third chapter, I set up the methodological foundation for my statistical analyses by introducing my data set, variables, and statistical models. While the fourth chapter includes the results of descriptive and preliminary analyses, the fifth chapter provides the results of more advanced statistical analyses that answer the primary research question of this study. In the last chapter, I summarize my findings and state my suggestions for policymakers and for future research.

CHAPTER 2

LITERATURE REVIEW

This chapter provides a systematic review of the literature that informs this study. The review of the literature is divided into three main areas. I first discuss theoretical literature that highlights the importance of community characteristics in shaping individual beliefs and behaviors, including schooling behaviors. Next, I present the existing empirical evidence on the relationship between community-level socio-cultural and economic factors and educational attainment in developing countries. Finally, I review the empirical literature on the determinants of educational attainment in Turkey and the emphasis on community factors in the Turkish literature.

2.1. Theoretical Background

2.1.1. Socio-cultural Considerations

Sociologists often claim that actions of individuals are not independent from the social context in which they live. Based on this claim, it is also argued that children's development and their participation in formal education are also influenced by broader community they are part of. In this section, therefore, I review the theoretical considerations regarding to the relationship between socio-cultural context and individual behaviors, with specific attention to children's development and their educational involvement.

a) Social capital and individual behavior

Social action is generally described and explained in two different ways. While economists often view action as guided independently by self-interest, sociologists suggest that it is shaped and constrained by the social context in which individuals live. According to most sociologists, social action is controlled by the norms and rules of society (Coleman, 1988). It is argued that these norms and rules can shape individuals' beliefs and behaviors through the process of social influence. In this process, individuals feel obligated to behave in accordance with the norms of their community because they wish to either avoid sanctions or to get others' acceptance (Kravdal, 2002). In addition to social influence, social context can also affect individuals' behaviors more directly through transmission of knowledge and attitudes among members of the society (Kravdal, 2002; Lee & Croninger, 1996). As a result of this transmission process, which is generally called social learning, individuals may completely change or redesign their beliefs and behaviors. In sum, from a sociological perspective, it is argued that the social context can affect individuals' behaviors through their social relationships with others with whom they live.

The relationship one has with other individuals or institutions in society, in a broad view, was conceptualized as social capital by Coleman (1988). Coleman argued that, similar to both physical capital and human capital, social capital can also be thought of as a resource for individuals' behaviors. For example, obtaining information through social relationships, as one of the most important forms of social capital, can play a very important role in individuals' behaviors, because information generally affects behaviors. From this perspective, some people are more advantaged than others since both the quality and quantity of information that can be obtained through social relationships strongly depend on the social context in which individuals live. Social capital, therefore, may also be defined as the benefits one can gain because of his/her connections with others in a specific system (Kelly, 2002). Based on these definitions, it can be argued that one who lives in an affluent community probably has more social capital than others

who live in poor or less educated communities.

Social capital also refers to the shared values that allow individuals to live together (Fukuyama, 1999). This type of social capital is formed extensively by the norms and sanctions in society. From this perspective, social capital not only encourages individuals to behave in certain ways, but also limits them (Coleman, 1988). For example, norms in a community that provides high respect and more opportunities for educated women can encourage women to get more education and can result in high educational attainment among women in that community. On the other hand, norms in another community can limit women's involvement in education or other social activities. Furthermore, it is more likely that a person who lives in the former context will develop positive attitudes toward women's education compared to a person who lives in the latter context. It therefore can be argued that the social capital that individuals possess can influence both their personal beliefs and behaviors. In this respect, social norms and social relations among individuals in the community are often mentioned as significant contributors to educational exclusion (Govinda & Bandyopadhyay, 2010).

b) Social context and children's development

It is a common argument that individuals' beliefs and behaviors are influenced by others, as human development is a complex process that is involved in and affected by multiple ecological systems. For example, events happen in school and at home, and interactions between these two settings can affect a child's development (Bronfenbrenner, 1979). In a similar vein, it is also argued that the development of children can be affected by the community in which they live. There is a growing literature about the effects of community-level socio-economic and structural differences on children's development. This literature indicates that the impact of communities on children's development is separate from the impact of household characteristics

(Adams, 2006). This impact can be derived from the peer group of children as well as the adults with whom children communicate or whom they observe in their community. At this point, three types of theories — collective socialization models, institutional models, and epidemic models — suggested by Jencks and Mayer (1990) may help to explain how children's development can be influenced by the social context in which they live.

Collective socialization models emphasize the role modeling of adults and argue that affluent adults in the community can help children to behave in accordance with social norms and public order (Jencks & Mayer, 1990). Adults in a community, as role models, may either negatively or positively influence children's behaviors and development in that community. For example, seeing adults who are educated and successful may encourage children to think that it is possible to be successful by getting more education, even if they do not see similar role models among their immediate family members. In contrast, if children do not know anybody who graduated from high school in their community, they probably think that attending high school is not necessary or possible for someone from their community. In addition, adults can serve as resources for children in terms of providing information about schools and job opportunities. Hence, children's chances of getting more information about these matters increase with the level of education that adults have attained in their community (Wilson, 1987).

While institutional models are also interested in the effects of adults on the development of children, their specific focus is the role of exogenous adults who work in community institutions, such as schools and the police force. Similar to the collective socialization models, these models also point out the importance of the relationship between adults and children in the same community. Specifically, it is suggested that children in affluent communities benefit more from exogenous adults compared to children from poor communities. For example, it is assumed that police often behave differently in rich and poor communities, and this may negatively affect the criminal records of children who live in poor communities. Likewise, it is well known that affluent communities often get better teachers, principals, social workers, etc. who can positively influence children's development by supporting their educational attainment and achievement (Jencks & Mayer, 1990).

Lastly, epidemic models focus on how peers influence the behaviors of each other (Crane, 1991; Gephart, 1997; Jencks & Mayer, 1990). These models assume that children's behaviors are not independent from how their peers behave in the same community. For example, living in a community where every child is involved in some kind of illegal activity may make it hard for children to avoid similar activities. Similarly, peer groups can influence the educational attainment of children, independently from family characteristics. If children live in a community where everyone goes to school, they may also feel compelled to go to school, even if it is not theirs or their families' intentional selection. Based on these considerations, it is argued that even children from very similar families can behave distinctly different in poor or affluent communities because of the general behaviors of children in the community (Jencks & Mayer, 1990).

In general, theoretically suggested close association between the social context and individuals' behaviors implies that the schooling decisions of children or their families are affected by the social context in which they live. In this regard, social context can influence children's school participation in variety of ways (Garner & Raudenbush, 1991). Parents, for example, often benefit from the experience of other parents in their community when they make important decisions about the education of their own children (Lee & Croninger, 1996). Children's willingness to attend school can also be affected by the level of education that adults

attain in their community, as illustrated before. Similarly, children can be influenced by the school participation pattern of their peers in their community (Dreze & Kingdon, 2001).

2.1.2. Economic Considerations

There are also theories that focus on the effects of community-level economic resources and incentives on individuals' behaviors and children's development. In terms of educational attainment, classic economic models assume that parents⁶ make a rational decision by considering both the costs of schooling and its future return when they decide whether to send their children to school or not (Basu & Van, 1998; Blundell, Dearden, Meghir, & Sianesi, 1999; Smits, 2007). From this perspective, children's school participation may also be affected by the economic characteristics of their community, as these characteristics can impact both the costs of schooling and its expected returns. Costs of schooling can affect families' schooling decisions in two different forms, direct costs and opportunity costs. Direct costs include costs of school materials, such as books, uniforms, supplementary tools, school fees, travel costs, etc. As previously mentioned, both primary and secondary schools are free of charge, and school books are distributed by government for free in Turkey. However, families may still have to deal with some direct costs, such as unofficial school fees, uniforms, special educational materials, etc., and this can partly affect the schooling decision of families, especially poor ones.

More important than the direct costs of schooling, families also face important opportunity costs as long as they send their children to school. In this regard, the community in which families live is a very important factor in their schooling decisions for their children, as communities differ in terms of the child labor market. To illustrate, a greater number of

⁶It is known that schooling decisions of young children are generally made by their parents in developing countries (Huisman & Smits, 2009a).

employment opportunities for young children in a community can increase the opportunity costs of schooling, which may negatively influence the schooling decisions of children or their families (Binder, 1999). If parents see that there are existing child-labor opportunities in their community and the returns to education are relatively low, they may prefer having their children work and contribute to the family budget, rather than sending them to school (Webbink, Smits, & Jong, 2008). Therefore, poor families in rural areas, where children can be employed easily in agricultural activities, may be less willing to send their children to school (Chudgar, 2006a). Families in more modern areas, however, may not find many employment opportunities for their children, even if they wish, as mechanization reduces the need for unskilled labor (Webbink, et al., 2008).

Future earning is another important factor that can also affect children's school participation. According to human capital theory, education is a crucial investment that can increase the income prospects of individuals (Becker, 1962). From this perspective, it can be argued that parents compare the prospective returns to education with its current costs, including both the direct and the opportunity costs, when they decide whether to send their children to school or not, and they make a favorable decision if the prospective returns exceed its immediate costs (Blundell, et al., 1999; Tansel, 2002). In this regard, the structure of the adult labor market in the community may play a key role in families' schooling decisions. If parents observe that educated people earn more in their community, they will be more willing to educate their children (Chudgar & Shafiq, 2010; Smits, 2007). However, if education does not substantially increase job opportunities and economic welfare in their society, parents may not seek higher levels of education for their children. Thus, in less industrialized societies, parents might be less willing to send their children to school.

Similarly, it is argued that in less developed societies where capital can be still directly transferred, via the family farm, etc., parents may invest less in their children's education than families in more developed societies where education is an important determinant of future welfare (Smits, 2007). In addition, living in a less developed community can be an important drawback for children's development regardless of their family backgrounds. For example, poor communities most probably have lower quality institutional infrastructures (schools, hospitals, family support services, etc.) than affluent communities. These low-quality institutional infrastructures in poor communities may not provide enough support for the development of children in those communities. In addition, children who live in these communities may not have direct access to or information about high quality education and better employment opportunities (Galster, Marcotte, Mandell, Wolman, & Augustine, 2007). In this context, it can be argued that families' schooling decisions for their children can be influenced by general economic conditions and employment opportunities in their communities (Gephart, 1997).

2.2. Empirical Evidence from Developing Countries

Place of residence (e.g., urban vs. rural) has been traditionally used in the literature in order to analyze and predict the effect of social context on educational attainment, since urban or rural residency is often highly related to communities' socio-economic condition in developing countries. In existing studies, place of residence has often been found among the biggest predictors of children's school participation in developing countries. King and Lillard (1983) indicated that the probability of attaining higher levels of education was much lower for children who lived in rural areas than it was for children who lived in urban and semi-urban areas in the Philippines. Similarly, it was found that girls who lived in the rural areas of Pakistan had much less chance to attend or complete primary school compared to their male peers as well as to girls
in urban areas (Lloyd, Mete, & Grant, 2007). A study in five Arab countries, Morocco, Algeria, Tunisia, Egypt, and Syria, also showed that living in the countryside implied less schooling for both boys and girls, with a higher impact on girls, compared to living in cities (Smits, 2007). Huisman and Smits (2009a) also found in their study of 30 developing countries that living in a rural area was negatively associated with girls' school enrollment, although it was not significantly related to boys' schooling, after other factors were controlled for. In the case of Turkey, the extant literature indicates that living in rural areas is among the most prominent disadvantages in terms of the educational attainment of both boys and girls, with the greater impact on girls (Duman, 2010; Hisarciklilar, McKay, & Wright, 2010; Smits & Gunduz-Hosgor, 2006; Tansel, 2002).

However, more recent studies, which particularly focus on the effects of social context on educational attainment, have used more detailed variables than type of residence to analyze the effects of both economic and socio-cultural community factors on educational attainment. At this point, economic indicators such as the average income of community members, the available labor market, the level of industrialization in the community, and socio-cultural indicators such as average educational attainment, adult literacy ratios, and level of women's empowerment in the community, have been mentioned in the literature as important community-level factors affecting educational attainment in developing countries. Existing studies generally use nationally representative individual-level data sets and employ various statistical methods such as ordinary least squares (OLS), ordered probit and logit models, hierarchical linear modeling (HLM), etc., in order to investigate the relationship between community level variables and educational attainment. Given the context above, in the next section I review the recent literature on the effects of both economic and socio-cultural community factors on educational attainment in developing countries.

2.2.1. Economic Community Factors

The strong relationship between household-level poverty and lower educational attainment is well documented in the literature. There is extensive research, both in Turkey and in many other developing countries, which uniformly suggests that children from poor families have significantly fewer chances to attain more education compared to children from more affluent families (Anh, et al., 1998; Bakis, et al., 2009; Brown & Park, 2002; Filmer, 2000; Hannum, 2003; Huisman & Smits, 2009a; Smits & Gunduz-Hosgor, 2006; Tansel, 2002; Tomul, 2008; UNESCO, 2010). Furthermore, it is argued that the concentration of poverty in a certain community may negatively affect the educational attainment chances of children in that community (Garner & Raudenbush, 1991) because of the lack of economic and social resources.

Although the relationship between the general economic condition of a community and the school participation of children in that community has not yet been explored substantially, several recent studies in developing countries encourage researchers to look at this relationship more extensively. Community level per capita income, for example, was found to be significantly associated with school enrollment in China, after controlling for other factors such as gender, age, and family resources (Adams & Hannum, 2005). It was also found that district-level economic conditions, which included average per capita expenditure, average household expenditure, and average per child expenditure on education, positively associated with girls' school participation in India (Chudgar, 2006b). These findings have been also confirmed by several similar studies conducted in developing countries (Binder, 1999; Brown & Park, 2002;

Connelly & Zheng, 2003; Hannum, 2003). Based on this evidence, it can be argued that children from wealthier communities may have more chances to enroll in school compared to children from poorer communities, even if they are coming from very similar families and have very similar demographic characteristics. This is generally explained by the effects of communities on returns to education via school quality or/and labor market structure (Brown & Park, 2002).

In the literature, the availability or the quality of physical infrastructures in the community is also mentioned as an important determinant of educational attainment in developing countries. According to Dreze and Kingdom (2001), for example, availability of a post office and piped water in the community positively affects the school participation of children. In addition, the degree of modernization of communities or regions, which is closely related to the availability and the quality of physical infrastructures, was found to be a very significant determinant for school participation of both boys and girls in many developing countries (Buchmann & Brakewood, 2000; Dreze & Kingdon, 2001; Huisman & Smits, 2009a; Smits, 2007). In order to explain the positive effect of modernization on children's school participation, it is argued that transportation to school would be easier and pressure on parents to educate their children would be higher in more developed areas (Huisman & Smits, 2009a). It should also be considered that these well-developed areas probably have better teachers and school facilities, which may also influence the school participation of children.

In Turkey, Tansel (2002) investigated whether development, or modernization, of the streets on which families live affects their children's school participation or not. In this study, urban streets were categorized as developed, undeveloped, or a squatter settlement. This classification was done according to interviewers' own observations of several factors. A developed street, for example, had residences with higher rents, enjoyed a better transportation

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system, and was relatively closer to the city center compared to an undeveloped street. A squatter settlement was defined as a settlement that was built on public or other individuals' land without a construction permit. Results of the study showed that living on an undeveloped street or in a squatter settlement negatively and strongly affected the children's chance of middle school attainment after controlling for individual- and household-level characteristics, while it did not significantly influence primary schooling. In order to account for this result, the author noted that generally the poorest migrants who did not have enough education to acquire well-paid jobs lived on undeveloped streets and in squatter settlements. It was also discussed that middle and high schools might be neither available nor close enough for children to access safely and easily in these settlements.

The structure of the labor market in the community is also considered an important factor affecting children's and their families' desire for education, and therefore children's actual school participation. This effect could either be negative because of child-labor activities, or it could be positive because of well-paid job opportunities for more educated people (Buchmann & Brakewood, 2000). Child labor is often found to be a significant factor in terms of limiting the school participation of children in developing countries (Canagarajah & Coulombe, 1997; Psacharopoulos, 1997). For example, Chudgar (2006b) found that the prevalence of child labor in Indian districts is negatively associated with the school participation of both boys and girls in those districts. It is further argued that the negative effects of child labor activities are more common in these areas (Webbink, et al., 2008). Smits (2007), however, found that dropping out of school is more common among older boys in the more developed regions of five Arab countries. The author accounted for this finding by arguing that one of the possible reasons for this situation

could be the greater number of opportunities to earn money for these children in more developed areas.

Beyond the effect of child labor, the labor market for adults can also affect children's school participation because of its impact on future earning opportunities. Increases in future earning opportunities may motivate parents to invest more in their children's education because of their wish for their children's future well-being and/or their expectations for future economic assistance. For example, it was found that there was a significant positive relationship between children's school participation in Kenya and their parents' anticipation of future economic assistance (Buchmann, 2000). At this point, it may be assumed that the school participation of children will be higher in more industrialized communities, where educated people could secure higher earnings. There is not, however, enough empirical evidence to confirm this assumption.

Data from 30 developing countries showed that the proportion of the work force with a white-collar job in the district was significantly associated with higher school-enrollment rates. It was, however, found that this variable was no longer significant in multivariate analyses where other factors were controlled for (Huisman & Smits, 2009b). Similarly, Smits (2007) found that the prevalence of white-collar jobs in the region unexpectedly did not have any positive impact on school participation in five Arab countries. Tansel (2002) suggested that higher rates of industrial employment at the provincial level may result in higher educational attainment in Turkey, although its effect was only significant for a few cases. There are also studies in developing countries that suggest that the structure of the labor market can contribute to the gender gap in school participation. Buchmann (2000, p. 1371) concluded her study of child schooling in Kenya by noting that "if parents perceive limited returns to girls' education due to gender discrimination in the labor market, girls' school enrollment suffers."

2.2.2. Socio-cultural Community Factors

In addition to economic factors, several studies in developing countries suggest that community-level socio-cultural factors may also influence children's school participation, but there have not been enough studies to substantially explore this relationship too. For example, the literature is lacking in terms of exploring the effects of the average educational attainment of adults and peers in the community on children's school participation, although research from both Turkey and other developing countries uniformly illustrates the strong positive relationship between parents' educational attainment and children's school participation (Anh, et al., 1998; Buchmann & Brakewood, 2000; Chudgar, 2009; Connelly & Zheng, 2003; Dreze & Kingdon, 2001; Handa, 1996; Huisman & Smits, 2009a; Sathar & Lloyd, 1994; Smits & Gunduz-Hosgor, 2006; Tansel, 2002; Tomul, 2008).

There are, however, several recent studies that have included adults' average educational attainment and the school participation of peer groups in the community as predictors of the children's school participation in developing countries. In China, Connely and Zheng (2003) showed that the proportion of the neighborhood that was in school was positively associated with children's school enrollment. In their study, they found that living in a village that had a high level of school enrollment significantly increased the schooling chance of both boys and girls, with more effect on girls. Community-level adult literacy was also found to be positively associated with higher school participation for children (Buchmann & Brakewood, 2000; Chudgar, 2009). Similarly, the proportion of literate women and the percentage of the women with higher education in the district were found to be positive indicators for school participation for both boys and girls, with more impact on girls, in India (Chudgar, 2009).

Empowerment of women at the community level is also mentioned in the literature as an

important determinant of children's welfare, including their school participation, in developing countries (Webbink, et al., 2008). Chudgar (2006b) suggested that as an indicator of the overall status of women within a community, the degree of women's media exposure and women's autonomy in family decision making are positively associated with school participation of both boys and girls, with higher impact on girls. The percentage of women of age 40–69 in the district, as an indicator of women's life conditions in society, was also found to be significantly associated with girls' school enrollment in a study of 30 developing countries (Huisman & Smits, 2009a). In addition, the presence of women's associations in villages was found to be positively related to the current school enrollment and grade attainment of girls in rural India (Dreze & Kingdon, 2001).

In this context, it can be argued that community-level socio-cultural factors may be more important for girls' schooling than for boys' schooling in developing countries. Because women's roles are often specified as wife and mother in many societies, including Turkey, it is believed that formal education is not necessary for women to perform their social roles (Bakis, et al., 2009; Csapo, 1981). As another cultural obstacle for girls' schooling in developing countries, it has been argued that parents tend to attach more importance to the education of their sons than their daughters in countries where sons are considered to be responsible for supporting their parents in their old age (Huisman & Smits, 2009a; Schultz, 2002). Similarly, the marriage tradition in society may impact parents' decisions about investing in their daughters' education. Because girls tend to marry into the families of their husbands in many developing countries, parents may be concerned that the returns to investment for the education of their daughters go to the husband's family. So, they may favor the education of their sons over the education of their daughters (Smits & Gunduz-Hosgor, 2006). From a different perspective, Chudgar (2006b)

mentioned marriageability as a key indicator for families' decisions about the education of their daughters. She emphasized that in societies where women are expected to "marry up," getting more education may not raise girls' chances of marriageability. Due to the fact that it is very important for women to be married in many societies, girls may have much fewer schooling opportunities compared to boys if they are expected to marry someone who has more education.

In sum, previous studies regarding the effect of community factors on the school participation of children suggest that there are significant relationships between community-level economic factors, such as average per capita income and job market, and the school participation of children in several developing countries. Similarly, existing studies have also found strong associations between socio-cultural community factors, such as adult education, cultural norms, and women's empowerment, and children's school participation in developing countries. The research on the relationship between community-level factors and school participation, however, is relatively new and the findings are not verified in different countries and with different data sets.

2.3. Previous Studies in Turkey

In this section, I review the existing quantitative studies that concern the low levels of educational attainment in Turkey. I introduce the variables and methods used in these studies and summarize their core findings. Since existing studies mostly focus on the importance of household characteristics for educational attainment, this review informed my study by exposing the common household-level factors that have been found to be significant predictors of educational attainment in Turkey. I therefore controlled for these household-level factors in my study while investigating the relationship between community-level factors and the school participation of children.

2.3.1. Data, Variables, and Methods Used

Although factors related to educational attainment have been extensively studied in many developing countries during the last couple of decades, there were not many studies of this issue until recently in Turkey. During the last 10 years, however, several studies that focus on the educational attainment problem in Turkey have been conducted. These studies aimed to determine the factors that are associated with educational attainment by using different perspectives. While some studies primarily focused on the gender disparity in educational attainment and factors that may cause it, others focused on the relationship between family background characteristics such as parental education, sibling size, ethnicity, etc., and educational attainment. Data used in these studies mostly came from the State Institute of Statistics (SIS) of Turkey, while some studies used data from the Turkey Demographic and Health Survey (TDHS) conducted by Hacettepe University's Institute of Population Studies in coordination with Macro International. Different statistical methods, such as OLS and probit and logit models, were used in these studies depending on their primary interest and dependent variables. While some studies used children's school enrollment status (enrolled or not) at the time of the surveys as a dependent variable, others used the final grade attainment of children to determine their level of educational attainment. Detailed information about data, variables, and methods used in these studies can be seen in Table A1 in the Appendix.

2.3.2. Core Findings

a) Household wealth

Household wealth is known to be a significant indicator of children's school participation in developing countries. It has often been found that there is a strong negative association between household poverty and children's school participation in many developing countries (Filmer, 2000). Related studies in Turkey also confirm these findings. In general, it was found that children in the wealthiest 20 percent of households had five times more chance to attend higher education than their counterparts in the poorest 20 percent in Turkey (UNESCO, 2010). Tansel (2002) also showed that per adult expenditures in the family were significantly associated with children's schooling at all levels (elementary, middle, and secondary). Studies that used different measures of household wealth, such as wealth index, household income, etc., also found a strong relationship between household wealth and educational attainment of both genders in Turkey (Kirdar, 2009; Smits & Gunduz-Hosgor, 2006; Tomul, 2008). As discussed in earlier sections, the negative influence of household poverty on children's school participation can be explained by its aggravating effect on the impacts of the direct and the opportunity costs of schooling.

b) Parental education

It is a well-established argument that parental education is one of the most powerful determinants of the educational participation of children in many developing countries (UNESCO, 2010). In the case of Turkey, almost all of the existing studies indicate a strong association between parental education and children's schooling (Bakis, et al., 2009; Goksel, 2008; Hisarciklilar, 2002; Koc, 2008; Smits & Gunduz-Hosgor, 2006; Tansel, 2002; Tomul, 2008), in line with international research (Anh, et al., 1998; Chudgar, 2009; Connelly & Zheng, 2003; Dreze & Kingdon, 2001; Huisman & Smits, 2009a; King & Lillard, 1983). In general, parental education may impact children's education via different channels. For example, parents who attain a higher level of education probably have more positive attitudes toward schooling. In addition, these parents can be good role models for their own children in terms of educational attainment. Parental education is also often highly correlated with other factors (e.g., household

wealth and household size) that may affect school participation of children (Koc, 2008).

c) Household size

Household size or number of siblings is another important factor affecting children's educational attainment in developing countries (Anh, et al., 1998; Huisman & Smits, 2009a; Knodel, et al., 1990; Pong, 1997; Sudha, 1997). In Turkey, belonging to a large family was also found to be a negative indicator of both boys' and girls' schooling (Hisarciklilar, 2002). Similarly, Koc (2008) found that the number of siblings was negatively associated with educational attainment for both genders, with more impact on girls. Being a member of a larger family was also found to be among the significant factors that contributed educational attainment inequality among girls (Duman, 2010). Bakis et al. (2009) also found that the number of siblings was negatively associated with educational attainment, but it was only significant for girls at the secondary level. The negative relationship between family size and the school participation of children can also be explained by both the direct and the opportunity costs of schooling. It is obvious that the direct costs of schooling would be more challenging for families with more children. In addition, some of the children, generally older siblings, may have to work either at home or outside to support their family and their siblings' schooling.

d) Mother's ability to speak Turkish

Speaking a minority language is known as one of the most significant obstacles for children's schooling in many developing countries, along with poverty and parental education (UNESCO, 2010).In Turkey, it was found that girls who have a non-Turkish mother tongue are very disadvantaged in terms of school participation. The current EFA report (UNESCO, 2010) refers to these girls as one of the most marginalized groups in the world regarding educational attainment. Smits and Gunduz-Hosgor (2006) also indicated that having a mother who could not

speak Turkish was a significant obstacle to schooling in Turkey, especially for girls. This may be explained in several different ways. First, women who do not know the country's official language probably become more dependent on their husbands, have to accept more traditional gender role attitudes, have relatively lower chance to get information about schooling, and lose their bargaining power for their daughters' education (Gündüz-Hosgör & Smits, 2007; Smits & Gunduz-Hosgor, 2006). Second, most of the children whose mother cannot speak Turkish start learning Turkish when they begin first grade and they are challenged with many hardships because there are no special programs in schools for children who speak Turkish as a second language. Hence, these challenges may force students to drop out of school earlier than they desire. In fact, dropout rates were found to be much higher for ethnic non-Turkish children compared to ethnic Turkish children, even at very early grades (Kirdar, 2009).

e) Gendered cultural values

Traditional cultural beliefs and attitudes may also be negatively associated with children's school participation. Traditional cultural values may limit children's formal schooling, especially in rural and more culturally traditional areas (UNESCO, 2010). This limitation could be even larger for girls, since traditional gender roles and expectations in many societies mostly assume that girls stay within the home and are responsible for things such as cooking, child rearing, and other household chores (Bakis, et. al, 2009; Smits & Gunduz-Hosgor, 2006). At this point, Smits and Gunduz-Hosgor (2006) found that when a mother agrees with the following proposition, "It is better for a male than for a female child to have education," her daughter's secondary school enrollment chances decrease significantly in Turkey, after controlling for other household-level variables such as parental education, family income, household size, etc.

2.4. Summary and Research Questions

Low participation in formal schooling is still a significant problem for many developing countries, even at the primary school level. Turkey is also among the countries that struggle with low school participation at both the primary and secondary levels. In order to ameliorate this situation, it is vital to understand the factors that are related to school participation. Hence, an extensive number of studies have been conducted in order to determine these factors by generally focusing on household level variables in both Turkey and other developing countries. Most of these studies have used nationally representative individual-level data sets and have employed statistical analyses such as ordinary least squares (OLS), ordered probit and logit models, etc. Results of existing studies suggest that several household-level factors, including level of parental education, household income, family size, gendered cultural values, etc., are strongly related to the school participation of children in Turkey, similar to many other developing countries.

There is, however, not enough research that explores how the factors outside of the household influence family schooling decisions in developing countries (Chudgar, 2006b). This is also the same for research in Turkey. Several social and economic theories, however, suggest that individuals' behaviors and children's development can be significantly influenced by the social context in which they live. In addition, there are empirical studies from developing countries that confirm these theories by showing significant relationship between community-level factors and children's school participation, after controlling for individual- and household-level variables. In sum, both the theoretical and the empirical literatures suggest that children's school participation can be affected by community-level economic and socio-cultural factors, such as availability and quality of infrastructures, general economic conditions, norms and values,

and level of adults' educational attainments.

In this context, it is important to explore how different community-level factors are associated with the school participation of children in Turkey, and how these associations vary by region, in order to inform policy aimed at providing formal education to every child in every part of the country. Exposing this relationship is important for helping policymakers develop a systematic understanding of the relationship between the context in which children live and their school participation in Turkey. In addition, this study can also inform educational policy in other developing countries that suffer from the same problem. Turkey serves as a very suitable place for such a study since school participation shortfalls are mostly concentrated in particular areas that are often found to be the least developed parts of the country in terms of many socioeconomic variables.

In summary, my aim is to analyze the effects of community-level factors on the school participation of children in Turkey by using the latest available nationally representative individual-level data set. In addition to commonly used household-level variables (parental education, household size, household poverty, etc.), community-level variables (average adult education, level of poverty, etc.) will also be included in this study as independent variables. Beyond investigating the relationship of community-level factors to school participation, I will also descriptively depict the current picture of school participation in Turkey. In my descriptive analyses, I will explore the percentage of in-school and out-of-school children by examining children's demographic characteristics, household factors, and their type of residence. I will also present the most prominent characteristics of out-of-school children in my descriptive analyses.

Factors Affecting School Participation in Turkey

(Conceptual Framework)⁷

Figure 2.1: Conceptual framework



Research Questions

1) What is the current pattern of school participation at the primary and secondary levels in

Turkey?

• What is the percentage of out-of-school children by demographic characteristics (age and gender), household-level factors (parental education, household wealth, household size, etc.), and place of residence (urban/rural and regions)?

['] The (+/–) signs assigned to variables are guided by existing findings in the literature and by informed expectations based on these existing findings.

- What are the most prominent characteristics of out-of-school children by region?
- What is the relative importance of individual-level factors (demographic characteristics of children and household factors) in school participation in terms of sign and magnitude by region?
- 2) Are community-level factors significantly associated with school participation in Turkey, after controlling for individual- and household-level factors?
 - What is the relative importance of economic and socio-cultural community factors for school participation of children in Turkey?

CHAPTER 3

DATA AND METHODOLOGY

This chapter presents the data and methodology used in this study. It includes detailed information on the variables and the model specifications that were used for the statistical analyses in this study.

3.1.Data

3.1.1. Data Source

The study's data come from the 2008 Turkey Demographic and Health Survey (TDHS-2008), which was conducted by Hacettepe University Institute of Population Studies. The survey is the ninth national demographic survey series and it is comparable to the worldwide standards of the Demographic and Health Survey (MEASURE/DHS+) project. The survey contains a variety of questions about households, including household assets, household size, demographic characteristics and educational attainment of members, etc. (Hacettepe University Institute of Population Studies, 2009). The data collected via the previous national demographic surveys have been used for a variety of studies, especially in the health and education fields. Specifically, TDHS-1993 and TDHS-1998 were used in several existing studies (e.g., Smits & Gunduz-Hosgor, 2006; Kirdar, 2009; Dayıoglu, Kirdar, & Tansel, 2009) that aimed to determine factors associated with school participation in Turkey. However, TDHS-2008 is the latest survey in this series, and to my knowledge it has not been used in any previous study with a related aim.

Academic staff of the Hacettepe University Institute of Population Studies trained, supervised, and coordinated the field staff, which included 19 teams with 8 people on each team. Data collection was undertaken by these teams between the first week of October, 2008, and the first week of the December, 2008. TDHS-2008 sample was selected by using a weighted, multistage, stratified cluster sampling method in order to provide accurate estimates for important demographic characteristics for various domains, such as Turkey as a whole, five main regions, urban and rural areas, etc. The Address Based Population Registration System (ABPRS-2007), a newly developed system that links each citizen to a specific address, was used to acquire information about all settlements of Turkey. Based on the settlement lists created using ABPRS-2007, a systematic random sample was selected with probability proportional to size (PPS). Although 13,521 households were initially selected for the survey, only 11,911 of them were considered as available for data collection, because others were not occupied at the time. The survey was successfully administrated to 10,525 households in all 81 of Turkey's provinces, and it included information about more than 40,000 individuals. Thus, the overall response rate was 88.4 percent, with a higher response rate for rural areas (95 percent) and a lower response rate for urban areas (86.1 percent). As part of TDHS-2008, 8,003 ever married women (15-49 years) from 10,525 households were further selected for the women's survey, which included more detailed information about their children and themselves, such as family planning, fertility, and infant and child mortality, etc. The total number of women who were successfully surveyed was 7,405, with a 92.5 percent response rate (Hacettepe University Institute of Population Studies, 2009).

3.1.2. Sample Selection Decisions and Representativeness

As seen in Table A2 in the Appendix, TDHS-2008 data shows that percentages of out-ofschool children are relatively high for children age 6 (30.6 percent) and 7 (5 percent). It can be interpreted that some of these children may turn six after the beginning of the school year, so they could not enroll (Hacettepe University Institute of Population Studies, 2009). Also, late enrollment, which is very common especially in the countryside of Turkey, may be another reason for these high un-enrollment ratios. Since most of these children will eventually attend school, they should not be considered as out-of-school children in statistical analyses. Thus, I kept only children older than 8 years old for my further analyses, similar to several previous studies (e.g., Kirdar, 2009; Smits & Gunduz-Hosgor, 2006). I chose 17 as an upper age boundary because it is the age at which most children complete their secondary-level education in Turkey. In my final sample, I only included children of household heads and children whose mothers participated in the women's survey, because I intended to use some information from the women's survey, such as mothers' Turkish speaking ability and their gender role attitudes, as independent variables. While individual-level variables were created from this new sample, community-level variables were created from the original data set and were incorporated into the new sample in order to create a more comprehensive representation of the community.

It should also be noted here that my final sample does not represent the children whose mothers were older than 50 at the time of data collection, because only 15–49-year-old women were included in the TDHS-2008 women's survey. However, the chance of having a mother older than 50 is not very high for 8–17 year old children in Turkey. For example, a 50-year-old woman should have given birth when she was 33 years old to have children in this age group, and this age goes up for women older than 50. In Turkey, around 7 percent of all births were given by women 35 or older and only around 1.5 percent of all children born belong to women 40 or older during the 1990s (Kirdar, 2009). Based on this information, the total number of 8–17-year-old children who are missing in the final sample is probably under 5 percent. In addition, TDHS-2008 data is weighted, and the data set includes a weight variable. Thus, I applied the sample weights to ensure representative estimates.

3.1.3. Definition of "Community"

In the TDHS-2008 data, individuals are grouped in households, and households are grouped in clusters. Small living areas that include approximately 100 households are defined as clusters. A total of 634 clusters were selected for data collection. While 400 of the selected clusters are located in urban areas, which have a population of at least 10,000 people, 234 clusters are located in rural areas, where the population of residents is less than 10,000. Twentyfive households from each cluster in a standard urban settlement and 15 households from each cluster in a standard rural settlement were selected for the survey in order to have an accurate representation of the clusters within each region (Hacettepe University Institute of Population Studies, 2009). In the Turkish context, people who live in the same cluster probably have very similar socio-economic characteristics, use the same external resources, and socially interact with each other. I therefore defined each cluster as a community for this study because communities are often described as small living areas where residents have various social interactions and share common external institutions such as schools and hospitals (Binder, 1999). Therefore, this data set matches the study's objectives well, as this study aimed to explore the current pattern of school participation, and to analyze the relationship between community characteristics and children's school participation in Turkey.

3.2.Variables

3.2.1. Dependent Variable

<u>School participation</u>: The dependent variable for this study was school participation, which is a dichotomous variable indicating whether the child attended school during the school year when the survey was conducted or not (1 = attended, 0 = not attended).

3.2.2. Independent Variables

Within the multilevel structure of my data, I considered both children's demographic characteristics (age and gender) and household-level factors (parental education, household wealth, household size, etc.) as one level and community characteristics as another level in order to make the analyses more manageable. When data has a multilevel structure, as in this study, elementary units (individuals in this study) are referred to as level-1units, and the clusters (communities in this study) are referred to as level-2 units (Skrondal & Rabe-Hesketh, 2004). In other words, level-1 units are grouped within level-2 units (Smith, 2011), as individuals are grouped in communities in the case of the present study. Thus, there are two groups of independent variables in this study: those that correspond to students' demographic and household characteristics (individual level) and those that correspond to their community (community level).

a) Individual-level variables

At the individual level, in addition to children's demographic characteristics (age and gender), household-level factors, which are often found to be significantly associated with children's school participation in Turkey, are included in the study.

Demographic characteristics of children: These variables include the child's gender and age. While gender is a dichotomous variable [female (1) and male (0)], age is a continuous variable, ranging from 8 to 17. In Turkey, it is known that there is a big gender disparity in school participation, especially at the secondary level, so I expected to find that the school participation of female students is significantly lower. In terms of age, I expected to find a negative relationship between age and school participation since many children may drop out when they get older due to various socio-economic reasons, such as marriage, work, cultural

restrictions, etc.

<u>Household poverty:</u> TheTDHS-2008 data set does not include information about households' income or expenditures; rather, it includes wealth quintiles (poorest, poorer, middle, richer, and richest) as indicators of families' economic condition. These wealth quintiles were generated based on the wealth index, which was constructed by using data on possession of consumer goods, dwelling and household characteristics, and assets. This wealth index is known as a good indicator of household wealth, because it is consistent with household income and expenditures (Rutstein, 1999, as cited in Hacettepe University Institute of Population Studies, 2009). As mentioned in the literature review chapter, empirical studies have shown that household poverty is one of the most significant limitations on school participation of children in many developing countries, including Turkey. Thus, in order to control for household poverty, I created a binary variable, with (1) for a child who lives in a poor household (one of the lowest two wealth quintiles; poorest and poorer) and (0) otherwise. Based on the findings of previous literature, I expected to find a negative relationship between household poverty and the school participation of children.

<u>Household heads' education</u>: The international literature uniformly highlights the importance of parental education for a child's school participation. It is also well documented in the literature that the mother's and father's levels of education are generally highly correlated. Therefore, I included a variable that indicated the household head's level of education in order to control for the effect of parental education. According to the data, around 65 percent of household heads in Turkey have lower than second-level primary school (equivalent to middle school) education. Thus, I created two categories to indicate the level of education that household heads attained: (0) lower than second-level primary and (1) second-level primary or

higher. I expected to find that the household head's level of education was positively associated with children's schooling, in line with previous literature.

<u>Mothers' Turkish speaking ability:</u> The mother's ability to speak Turkish was also included as an independent variable in this study since previous studies have indicated that it is significantly related to school participation in Turkey, even after controlling for mothers' level of education. This variable was a dichotomous variable, (1) if the mother could speak Turkish and (0) otherwise. As Smits and Gunduz-Hosgor (2006) found, I expected to find a positive relationship between mothers' ability to speak Turkish and the school participation of their children, especially for younger children.

<u>Household size</u>: Household size (numbers of household members) is often found to be significantly associated with school participation in both Turkey and other developing countries. Thus, I also included it as an independent variable in this study. This variable was a continuous variable ranging from 2 to 17. I expected to find a negative relationship between household size and school participation, as previous research suggests.

<u>Mothers' traditional gender role attitudes:</u> In order to control for gendered cultural values, mothers' responses to a survey question were included as an independent variable in this study. This question was: "It is better to educate a son than a daughter." This variable was dichotomous, coded (1) when women agreed with this proposition, and (0) when they disagreed. It was expected that this variable would be negatively associated with school participation, since this variable represents more traditional gender role attitudes at the household level.

b) Community-level variables

Level of adult education in the community: This variable was created and included in this study in order to explore the relationship between community-level adult education and

children's school participation, net of demographic and household level variables. This variable was defined as the proportion of adults who completed at least second-level primary school in the community. In order to construct this variable, the number of adults (18 years old and older) who completed at least second-level primary school in each community was divided by the total number of adults in the same community. Since this variable represented the availability of educated adult role models in the community, I expected to find a positive relationship between this variable and the school participation of children.

Level of poverty in the community: This variable was constructed and included in this study in order to investigate the relationship between school participation of a child and the general economic condition of her/his community. In the TDHS-2008 data set, the economic condition of each household is qualified with one of five wealth quintiles (poorest, poorer, middle, richer, and richest), as mentioned above where the household poverty variable is defined. This variable represents the proportion of households that were in one of the lowest two wealth quintiles (poorer or poorest) for each community. This variable could be viewed as an indicator of the quality of the general infrastructure and the schools in the community, the prevalence of child labor, the family's ability to borrow money from neighbors, etc. I therefore expected to find a negative relationship between this variable and the school participation of children.

<u>Gender role attitudes in the community:</u> Acceptance of traditional gender roles in a community was measured by women's response to an interview question ("It is better to educate a son than a daughter"), which was also used at the individual level. The proportion of women who agreed with this statement was constructed for each community. Based on the previous literature and the theoretical framework discussed in the previous chapter, I expected to find a negative relationship between this variable and school participation.

<u>Urbanization</u>: In the TDHS-2008, settlements with a population of at least 10,000 were defined as urban, while settlements with less than 10,000 were defined as rural. As is often found in both Turkey and other developing countries, I expected to find a positive relationship between living in an urban settlement and school participation, because urban settlements in developing countries generally have better community infrastructures, school facilities, future job opportunities, etc.

3.3.Correlations among Variables

Inter-correlations between independent variables at both levels were estimated before conducting statistical analyses in order to avoid multicollinearity between variables. I conducted both "Pearson's correlation" and "Kendall's tau b" tests, since many of my variables were binary. At level-1, inter-correlations between independent variables were not very strong (ranging from 0 to 0.47), indicating a limited possible multicollinearity problem. At the second level, however, stronger correlations were found between independent variables. Specifically, a very high correlation (0.82) between average adult education and community poverty was determined (see Table A7 and Table A8 for the correlation between all level-2 variables). Thus, I estimated two different models, each of which included either average adult education or community poverty at the second level, when I included level-2 variables in my analyses, and I report the results of both models.

3.4. Empirical Strategy

Empirical analyses in this study included two parts. I start by providing detailed descriptive analyses, followed by more extensive modeling and statistical analyses of factors associated with children's school participation in Turkey.

In the first part, I illustrated the school participation ratios of children by different groups, such as gender, age, household head's education, household wealth, household size, mother's Turkish speaking ability, type of residence (urban/rural), and regions. I then explored the relationship between my individual-level variables (demographic characteristics of children and household level factors) and school participation by using the binary logit model. I also conducted the same binary logit model for different regions in order to see the regional differences in this relationship.

In the second part, I employed multilevel analyses by using hierarchical linear modeling (HLM)to investigate the significance of the community-level variables, which I primarily focused on in this study.Below, I explain the binary logit model and HLM approaches, and I discuss the models' specifications and their applications in this study.

3.4.1. Binary Logit Model

The binary logit modeling approach is known as a more appropriate regression method to use when the dependent variable is binary, compared to the linear probability modeling (LPM) approach, because of several issues. First of all, since the dependent variable can only get values 0 and 1, error terms cannot be normally distributed, which is an important assumption of LPM. In addition, when we use a LPM with a binary outcome, it is possible to get predictions either less than zero or greater than one, which do not make sense because probabilities must be between zero and one. More importantly, it is unrealistic to assume a linear relationship between probability and all possible values of independent variables. Using LPM with binary dependent variables thus has some significant drawbacks, but these drawbacks can be overcome by using a binary logit model (Long, 1997; Wooldridge, 2003), where instead of directly modeling the 0-1 outcome, we model the chance of being 1, which can take any value from 0 to 1 and is mapped into all possible values via the logit link.

In this context, I used a binary logit model to investigate the relationship between my outcome variable (school participation) and my level-1 variables (age, gender, household head's education, household poverty, mother's gender role attitudes, household size, and mother's Turkish speaking ability), since my dependent variable, school participation, was binary:

Logit
$$(P_{ij}) = Log [P_{ij} / (1-P_{ij})] = p_{ij}(1)$$

Full logit model:

Logit (P_{ij}) =
$$\beta_{0j} + \beta_{1j}$$
FEMALE + β_{2j} AGE + β_{3j} HH_ED + β_{4j} HH_POVERTY
+ β_{5j} HH_SIZE+ β_{6j} GEN_RL + β_{7j} TURKISH + $r_{ij}(2)$

In this model, $[P_{ij} / (1-P_{ij})]$ is the odds of being in school compared to being out of school for a child i in community j (Tranmer & Elliot, 2008). The results of the estimated effects of independent variables were interpreted in terms of the odds ratio. While an effect on the odds ratio greater than one represents a positive relationship between school participation and the given variable, an effect on the odds ratio that is smaller than one indicates a negative relationship.

3.4.2. Hierarchical Linear Modeling

When I took community-level variables into account, I used HLM to address several issues that were derived from the multilevel nature of the data. First, individuals who belonged to the same community may have had more commonalities. Thus, this situation can result in

dependencies among observations and can violate the common classical statistics assumption that observations are independently distributed (De Leeuw & Meijer, 2008). In addition, variation of observations may substantially change across different communities, so withingroup variation should be taken into account. HLM therefore was an appropriate method to use in this study, since it allows intercepts and slopes to vary by groups (Raudenbush & Bryk, 2002; Skrondal & Rabe-Hesketh, 2004). In this method, I first used an unconditional model (a model with a random intercept only) in order to investigate if there was significant variation in the intercept across communities:

Level 1:
$$Y_{ij} = \beta_{0j} + r_{ij}$$

Level-2: $\beta_{0j} = \gamma_{00} + u_{0j}$ (3)

Where

Y_{ii} is the dependent variable for each individual in a community,

 β_{0j} is the mean outcome for community j,

 r_{ij} is a level-1 random error that is assumed to be normally distributed with a mean of zero and constant variance, σ^2 ,

 γ_{00} is the average of community means or a grand mean and a random error,

 u_{0j} is the random effect associated with community j, and it is assumed that u_{0j} is normally distributed with a mean of zero and a variance, τ_{00} .

I also calculated the intra-class correlation (ICC), ρ , which is the proportion of level-2 variance to the total variance. Thus, ρ denotes the importance of level-2 variables in explaining the variance in the outcome variable (Raudenbush & Bryk, 2002):

$$ICC_{logit} = \rho = \tau_{00} / (\tau_{00} + \pi^2 / 3)$$
(4)

Finally, I used two-level HLM to investigate the relationship between school participation and community-level factors, after controlling for both children's demographic characteristics (age and gender) and household-level factors (household head's education, household wealth, household size, etc.).

At level-1, for child i in community j,

$$\begin{split} p_{ij} &= \beta_{0j} + \beta_{1j} FEMALE + \beta_{2j} AGE + \beta_{3j} HH_ED + \beta_{4j} HH_POVERTY \\ &+ \beta_{5j} HH_SIZE + \beta_{6j} GEN_RL + \beta_{7j} TURKISH + r_{ij}(5) \end{split}$$

In this equation, for a child i in community j, p_{ij} is a function of child's gender (FEMALE), age (AGE), household head's education (HH_ED), household's poverty (HH_POVERTY), household's size (HH_SIZE), mother's gender role attitudes (GEN_RL), and mother's Turkish speaking ability (TURKISH). β_{0j} is an intercept for community j and r_{ij} is random error, while β_{1j} , β_{2j} ,..., β_{7j} are coefficients for each level-1 variable, which varies across different communities, and the differences are random and controlled by one dispersion parameter.

At level-2,

$$\beta_{0j} = \gamma_{00} + \gamma_{01}CADULT_ED + \gamma_{02}CGEN_RL + \gamma_{03}URBAN + u_{0j}(6)$$

In this equation, intercept β_{0j} is a function of community-level variables; adult education (CADULT_ED), gender role attitudes (CGEN_RL), and urbanization (URBAN). While γ_{00} is a constant, which represents the grand mean, and u_{0j} is a random effect that captures the variations caused by the unobserved community factors, γ_{01} , γ_{02} , γ_{03} are the coefficients associated with each level-2 variables. In the application of HLM, I allowed the remaining level-1 coefficients to stay fixed at level-2. As mentioned in the previous section, I also estimated the same model with level of poverty (CPOVERTY) at the second level instead of adult education (CADULT_ED), because of the high correlations between these two variables.

CHAPTER 4

DESCRIPTIVE AND PRELIMINARY ANALYSES

In this section, I intend to answer my first research question (What is the current pattern of school participation at the primary and secondary levels in Turkey?) by descriptively depicting the school participation pattern in Turkey. The results of descriptive analyses include the means and standard deviations for all of the variables used in this study, and the percentage of out-of-school and in-school children by different groups, including all level-1 variables, type of residence (urban/rural), and regions. Chi-square tests were applied to investigate the significance of the relationship between school participation and different groups for each independent variable. I also identified the most prominent characteristics of out-of school children in Turkey by presenting the percentages of the out-of-school children who shared the same characteristics. Finally, before I started multilevel statistical analyses, I employed binary logistic regression analyses for more advanced investigation of the relationship between individual-level independent variables and school participation. All statistical analyses presented in this chapter were conducted in SPSS version 17.

4.1. Descriptive Statistics

This study used multilevel data from the 2008 round of the Turkey Demographic and Health Survey. Descriptive statistics for all dependent and independent variables used in this study are summarized in Table 4.1.In addition, Table 4.2presents the means and standard deviations for each independent variable by the school participation status of children. Recall that sample weight has been applied to data before computing the descriptive statistics.

	Min	Max	Mean	Std. Deviation	Ν
Dependent Variable				•	
School Participation*	0	1	.88	.33	6,667
<u>Level-1 Independent Variables</u>					
Household Head's Education*	0	1	.34	.48	6,675
Mother Speak Turkish*	0	1	.94	.24	6,675
Age of Child	8	17	12.37	2.86	6,675
Gender*	0	1	.50	.50	6,675
Household Poverty*	0	1	0.43	0.50	6,675
Number of Household Members	2	17	5.66	2.07	6,675
Mother's Gender Role Attitudes*	0	1	.14	.35	6,647
<u>Level-2 Independent Variables</u>					
Average Adult Education	0	0.94	0.39	0.21	613
Community Poverty	0	1	0.44	0.37	613
Average Gender Role Attitudes	0	0.5	0.12	0.12	613
Type of Residence (Urban/Rural)*	0	1	0.65	0.48	613
Valid N (listwise) = 6,640					
* Variables are binary					

Table 4.1: List of variables and descriptive statistics

	Out-of-school	In-school	Total
Level-1 Variables (Individual and family variables)	2		
Number of Household Members	6.64	5.52	5.66
	(2.44)	(1.97)	(2.07)
Age of Child	15.30	11.95	12.37
	(1.73)	(2.74)	(2.86)
Household Poverty	0.66	0.40	0.43
	(0.47)	(0.49)	(0.50)
Household Head's Education	0.15	0.37	0.34
	(0.36)	(0.48)	(0.48)
Gender (female=1)	0.59	0.48	0.50
	(0.49)	(0.50)	(0.50)
Mother Speak Turkish	0.86	0.95	0.94
	(0.35)	(0.22)	(0.24)
Mother's Gender Role Attitudes*	0.23	0.13	0.14
	(0.42)	(0.34)	(0.35)
<u>Level-2 Variables (Community</u> <u>variables)</u>			
Average Adult Education	0.27	0.39	0.37
	(0.15)	(0.19)	(0.19)
Community Poverty	0.59	0.40	0.43
	(0.36)	(0.36)	(0.37)
Average Gender Role Attitudes*	0.18	0.13	0.13
	(0.12)	(012)	(0.12)
Urban Residence	0.61	0.75	0.74
	(0.49)	(0.43)	(0.44)

Table 4.2: School participation by level-1 and level-2 variables, mean and S.D

* Higher means represents more traditional gender role attitudes.

4.2. Out-of-school Children by Different Groups

Table 4.3 presents the percentage of in-school and out-of-school children by different groups, including all level-1 variables, type of residence (urban/rural), and regions. The results of chi-square tests indicate that for all of these variables, there were significant differences between groups in terms of the school participation of children. As seen in Table 4.3, children from larger

households, children from poorer households, older children, females, children from households where the head had lower than middle school education, children from the East region, children whose mothers could not speak Turkish, children whose mothers had more traditional gender role attitudes, and children from rural areas were significantly disadvantaged compared to their counterparts in terms of school participation.

According to the results of the descriptive analyses, it is clear that school participation at both the primary and secondary levels is still a serious problem in Turkey, with a much more dramatic form at the secondary level as the rate of school participation is much lower for children age 14 years old and older. Just by looking at the descriptive statistics, it can also be argued that household poverty and household head's education stand out as major factors for children's school participation, although all independent variables seem to be systematically related to school participation. To illustrate, almost one-fourth of children in the poorest households were out of school compared to only 4 percent in the richest households. In terms of the household head's education, the percentage of out-of-school children (16 percent) in households where the household head had lower than middle school education was almost three times the percentage of out-of-school children (5.4 percent) in households where the household head at least a middle school education.

	Out-of-school (%)	In-school (%)
Number of Household Member*		
Less than Six	7.9	92.1
Six and More	18.8	81.2
<u>Age of Children*</u>		
8-10 years	1.0	99.0
11-13 years	3.7	96.3
14-17 years	29.0	71.0
<u>Gender*</u>		
Female	14.7	85.3
Male	10.1	89.9
<u>Wealth Quintile*</u>		
Poorest	23.1	76.9
Poorer	14.2	85.8
Middle	12.0	88.0
Richer	6.2	93.8
Richest	4.1	95.9
Household Head's Education*		
Lower than Middle Schoo	ol 16	84
Middle School or Higher	5.4	94.6
<u>Mother Speak Turkish*</u>		
Yes	11.3	88.7
No	29.3	70.7
Mothers' Gender Role Attitudes*		
Negative	19.9	80.1
Positive	11.1	88.9
<u>Regions*</u>		
West	11.5	88.5
South	11.1	88.9
Central	9.6	90.4
North	8.9	91.1
East	17.4	82.6
<u>Type of Residence*</u>		
Urban	10.3	89.7
Rural	18.3	81.7
Total	12.4	87.6

Table 4.3: Percentage of out-of-school children by different groups

* Chi-Square tests indicate significant differences between groups ($p \le 0.01$).

Table 4.3 also shows the relationship between the school participation of children and their place of residence, regarding both types of residence (urban/rural) and region. In terms of the type of residence, the ratio of out-of-school children was around 10% in urban areas, while it was significantly higher (18.3%) in rural settlements. Therefore, it can be interpreted that in Turkey the chance of being in school is higher for the children who live in urban areas compared to children who live in rural areas. Based on the numbers presented in Table 4.3, it can also be argued that children in the East region were significantly disadvantaged in terms of school participation. To illustrate, the percentage of out-of-school children in the East region (17.4%) was almost two times of the percentage of out-of-school children in the North region (8.9%). This result was somewhat expected as the East is the least developed region of Turkey in terms of many socio-economic variables. It was unexpected, however, to find that the country's two most developed regions, the West and the South, also experienced relatively lower school participation. One possible reason for this pattern could be the growing trend of immigration from less developed parts of the country to the urban centers of these two regions over the years. In order to check the appropriateness of this interpretation, I descriptively analyzed how type of residence (urban/rural) interacted with regions in regard to children's school participation status.
Region	Type of Residence	Out-of-school (%)	In-school (%)
West			
	Rural	10.9	89.1
~ .	Urban	11.6	88.4
<u>South</u>			
	Rural	13.2	86.8
	Urban	10.4	89.6
<u>Central</u>			
	Rural	17.2	82.8
	Urban	6.7	93.3
<u>North</u>			
	Rural	17.5	82.5
	Urban	3.6	96.4
<u>East</u>			
	Rural	25.1	74.9
	Urban	12.2	87.8

 Table 4.4: Regional differences in school participation by type of residence

According to Table 4.4, the West is the only region where the proportion of out-of-school children in urban areas was higher than the proportion of out-of-school children in rural areas. Interestingly, the percentage of out-of-school children in urban areas of the West was almost the same as the percentage of out-of-school children in urban areas of the East. Similar to the West, the South also had a much higher out-of-school children percentage in urban areas compared to the North and the Central. Hence, it seems that the school participation problems in the West and the South are quite different than the rest of the country. As mentioned above, children of immigrant families, who often live in the suburbs of metropolitan cities, could possibly be a reason for this pattern. In contrast, out-of-school children in the North and the Central are mostly concentrated in rural areas. This could be explained by socio-economic underdevelopment, geographic hardships, agricultural employment, and unavailability of schools, especially at the

secondary level, in the rural areas of these regions. As expected, the highest percentages of outof-school children in both urban and rural areas were found in the East. Specifically, children living in the rural parts of the East region seem to be the most marginalized groups in terms of their access to education, because around a quarter of them do not attend school.

4.3. Characteristics of Out-of-school Children

In order to identify better the out-of-school children in Turkey, the common characteristics of out-of-school children should be identified. Understanding the common characteristics of these children may help to determine the areas that should be primarily focused on in order to raise the overall school participation in the country. For example, although focusing on children whose mothers cannot speak Turkish could be a helpful strategy to increase school participation in certain areas or for certain groups, it cannot be an effective way to raise the overall school participation across the country since children whose mothers cannot speak Turkish are mostly concentrated in certain areas, and their numbers are relatively small (14.2 percent) among all out-of-school children. In addition, based on the numbers presented in Table 4.3, it can be argued that the policies intended to increase school participation in Turkey should pay special attention to the children who live in the East region. Although this interpretation is reasonable, it should also be noted that around one-third of all out-of-school children in Turkey live in the West region. Thus, there is also an immediate need for specific policies that should focus on the school participation problem in the West region. I therefore present the most prominent characteristics of out-of-school children in a percentage form in Table 4.5. In order to identify how characteristics of out-of-children differ by regions, I also present the same information separately for each region.

Characteristics	Total	West	South	Central	North	East
Age (14–17)	88.1	92.4	89.6	93.4	91.9	80.5
HH Head's ed. lower than middle school	84.9	80.5	88.8	78.4	83.1	91.1
In poor households*	66.0	42.0	79.2	54.8	81.7	89.0
Household size (Six and more)	62.4	47.4	61.3	38.5	60.2	89.2
Live in urban settlements	61.1	85.9	68.5	50.6	24.7	42.1
Female	58.7	53.1	63.1	59.5	44.7	64.2
Live in the West	34.7	-	-	-	-	-
Live in the East	34.0	-	-	-	-	-
Mother accepts traditional gender role	22.6	22.7	27.7	22.6	17.6	21.4
Mother cannot speak Turkish	14.2	0	4.6	0	0	40.2

Table 4.5: Selected important attributes of out-of-school children (%)

* Include the lowest and the second lowest poverty quintiles.

According to Table 4.5, 88.1 percent of all out-of-school children in Turkey are between 14 and 17 years old, pointing to the dramatic school participation problem at the secondary school level. Also, most (84.9 percent) of the out-of-school children live in households where the household head has lower than a middle school education. Similarly, a significant number of children who are out of school are from poor (65.9 percent) and large (six and more members) (62.4 percent) households. Although descriptive analyses show that the percentage of out-of-school children is significantly higher in rural areas compared to urban areas, indeed more than half of the out-of-school children live in urban areas of the country. This is mostly because of the high population of urban areas in Turkey. Hence, the school participation problem in urban areas should not be ignored. It is also important to highlight here that the West and the East together include more than two-thirds of all out-of-school children in Turkey.

When the characteristics of out-of-school children in different regions were investigated, several important differences emerged. First of all, children aged 14–17 years constitute around 90 percent of all out-of-school children in four of the five regions. This means that school

participation is not a big issue for younger children in these regions. However, almost 20 percent of all out-of-school children were younger than 14 years old in the East region. Given the fact that the East had the highest proportion of out-of-school children, school participation for younger children is still an important problem for this region. Another notable finding is that a very high proportion (40.2 percent) of out-of-school children in the East region had a mother who could not speak Turkish. In line with expectations, the East region also had the highest proportion of female out-of-school children among all regions. In terms of the type of residence, it was found that the significant proportion of the out-of-school children lived in urban areas in the West (85.9 percent) and the South (68.5 percent) regions. This could be explained by the high level of urbanization in these two regions. In contrast, only one fourth of out-of-school children lived in urban settlements in the North region. It is important to note here that because of the geographic constrains and pervasive agricultural works, a significant number of people live in rural areas in this region. These reasons may also contribute to the high number of children who cannot attend school in rural areas in this region, as discussed later in this chapter.

4.4. Results of Binary Logit Analysis

In this section, I introduce the results from the binary logistic regression analyses, where the dependent variable "school participation" is a dichotomous variable having the value 1 if the child is in school and 0 otherwise. These analyses allowed me to conduct a more advanced investigation of the relationship between the individual-level independent variables and school participation. Since this study primarily focused on the role of community-level variables, individual-level independent variables became secondary in the HLM analyses. I therefore intended first to find out which of the individual-level variables were significantly associated with the school participation of children before I started taking community-level variables into account by conducting HLM analyses. I also conducted binary logistic regression analyses separately for different age groups and for different regions in order to see how the effects of the individual-level independent variables on school participation differed for children in different age groups and in different regions. The results of the binary logistic regression analyses are reported in the form of odds ratios for the accessibility and the convenience of the interpretations.

	Exp (B) (n= 6,640)
Gender (female)	.61**
Age	.53**
Mother speaks Turkish	1.75**
Household head's education	2.20**
Mother accepts traditional gender role	.76**
Household poverty	.41**
Number of household members	.88**

 Table 4.6: Results of binary logit analysis for whole sample

** p≤0.01

Before starting interpretations of the results shown in Table 4.6, it is important to note that the model chi-square for the binary logistic model is significant ($p \le 0.01$), indicating that the overall model significantly improved over the null model (see Table A4 in Appendix). According to the results of the analysis, there are statistically significant ($p \le 0.01$) relationships between all of the individual-level independent variables and the school participation of children, as seen in Table 4.6.As explained in the methods section, an odds ratio greater than one indicates a positive relationship between school participation and the given variable, while an odds ratio that is smaller than one is a sign of a negative relationship. Based on the odds ratios presented in Table 4.6, it can be stated that the mother's ability to speak Turkish and the household head's education were positively associated with school participation, while being female, being older, the mother's traditional gender role attitudes, household poverty, and residing in a large household were negatively associated with school participation. All of these associations are in line with most of the previous Turkish and international research and with my expectations in terms of both their significance and the sign of the association.

As mentioned earlier, one of the most important advantages of reporting the odds ratio is its convenience of interpretation. The odds ratio enables us to interpret the likelihood of having the value of 0 or 1 for each individual case regarding different independent variables. In the case of my results, for example, the odds of being in school for a girl is 0.39 (1-0.61) times (or 39 percent) less than the odds of being in school for a boy, holding all other factors constant. Likewise, the odds of being in school decrease by 0.47 times with each one-year increase in the age of a child, while having one more household member decreases the odds of being in school by 0.12 times. It was also found that the mother's acceptance of traditional gender roles decreased the child's school participation chance by 0.24 times. According to the odds ratio for the mothers' ability to speak Turkish, it can be stated that a child whose mother could speak Turkish was 75 percent (1.75-1) more likely to be in school compared to a child whose mother could not speak Turkish. Similarly, a child's chance of being in school was 120 percent higher in a household where the household head had at least a middle school education. Finally, children who lived in poor households (households in the lowest two wealth quintiles) had 59 percent less chance to be in school compared to their counterparts.

4.4.1. Employing the Binary Logit Model for Different Age Groups

I also analyzed the data separately by different age groups in order to see if the relationship between each individual-level independent variable and the school participation status of children differed by age group. I first divided the sample into three age groups, 8–10

years, 11–13 years, and 14–17 years, with each group roughly consisting of one-third of my final sample. It was assumed that these age groups represented the children who were supposed to be in the first level of primary school (1–5 grades), second level of primary school (6–8 grades), and secondary school, respectively. I analyzed the same binary logit model separately for these three age groups. Since the results of the analyses for the first two groups looked very similar and there were not many out-of-school children in the first group (see Table 4.3), I merged these two groups and created a new age group (8–13 years), then employed the binary logit model. Table 4.7 presents the results of the binary logistic regression analyses by two age groups (8–13 years and 14–17 years) in terms of the odds ratios.

	8–13 years Exp (B)	14–17 years Exp (B)
	(n=4,204)	(n=2,436)
Gender (female)	.26**	.72**
Age	.60**	.66**
Mother speaks Turkish	2.13**	1.57**
Household head's education	.86**	2.54**
Mother accepts traditional gender role	.72**	.78**
Household poverty	.30**	.43**
Number of household members	.82**	.89**
** p< 0.01		

Table 4.7: Binary logit analysis by age groups

According to the results presented in Table 4.7, gender was much more strongly associated with the school participation of children in the first age group (8–13 years) compared to the school participation of children in the second age group (14–17 years). The odds ratio of .26 implies that a girl is 74 percent less likely to be in school compared to a boy in the first age group, holding all other factors constant. It should be noted here that the proportion of out-of-school children was very low (2.4 percent) for 8–13-year-old children, as most of these children

were in their compulsory primary school education. Thus, it can be argued that most out-ofschool children in this age group probably belonged to marginal groups, such as the poorest households, ethnic minorities, and highly conservative families. It is a well-established argument in the literature that girls living in these kinds of marginal groups are generally more disadvantaged in terms of school participation. Thus, this could be one possible reason for the strong association of gender with school participation for younger children. Descriptive analysis, presented in Table A5, also supports this argument by showing that a significant proportion of all out-of-school children (76.3 percent) in the first age group were female, while 56.4 percent of all out-of-school children were female in the second age group.

As seen in Table 4.7, there was also a much stronger association between the mother's ability to speak Turkish and school participation for children in the first age group, implying that a significant number of the out-of-school children in this age group belonged to ethnic minorities. For the first age group, descriptive analyses show that 9.5 percent of children whose mothers could not speak Turkish were not in school, while only 1.9 percent of children whose mothers spoke Turkish were not in school (see Table A6 in Appendix). Household poverty, household size, age, and mother's traditional gender role attitudes were also more strongly associated with the school participation of children in the first age group compared to the second age group, but the differences between magnitudes were not very high.

As expected, the household head's education was found to be positively and very strongly associated with the school participation of children between 14–17 years old, which included the majority of out-of-school children in Turkey. Surprisingly, however, the household head's education was found to be negatively associated with the school participation of children in the first age group. Because the proportion of out-of-school children in this age group was

very low, a few unusual cases from marginal groups might explain this unexpected result. For example, conservative/religious parents may intentionally refuse to send their daughter to mixedgender schools, especially at the second part of primary school (6–8 grades), even if they are well educated. This could be one possible explanation given the fact that most out-of-school children were girls at this level. In addition, children who have special educational needs may represent an important proportion of out-of-school children in this age group. It can be argued that more educated parents have a better sense of their children's special needs and are able to provide these needs outside of the formal education system. It is also known that some welleducated parents, even some public figures, choose to educate their children themselves rather than sending them to school, although home schooling is not legal in Turkey. In sum, these few unusual cases may help to explain the negative impact of the household head's education on a child's schooling in the first age groups, since the proportion of out-of-school children was very low and all other important factors were controlled for.

4.4.2. Employing the Binary Logit Model for Different Regions

Turkey shows great disparities among its regions in terms of many economic, cultural, and social areas, as illustrated in Chapter 1. In general, the West and the South are known as the most advanced and urbanized regions of the country. According to descriptive analyses presented at the beginning of this section, the West and the South also have similar patterns in terms of the school participation of children. The percentages of out-of-school children are very similar in these two regions, and their urban settlements share the significant portion of these children, unlike the other regions. Compared to the West and the South, however, the North and the Central regions enjoy a lower percentage of out-of-school children in general, especially in urban areas. In contrast, rural areas of both the North and the Central regions contain considerably higher percentages of out-of-school children compared to the West and the South. As expected, since it is known as the least developed region of the country in terms of many socio-economic variables, descriptive analyses indicated that the East had the highest percentage of out-of-school children in both the urban and the rural areas among all regions of Turkey.

Given both great socio-economic and cultural disparities among regions of Turkey and the differences found in the patterns of school participation in these regions, I decided to analyze the data separately for different regions in order to see if the relationship between each individual-level independent variable and the school participation status of children differed by region. Therefore, I applied my binary logit model separately to all five regions. The results of these analyses are presented in Table 4.8.

	West	South	Central	North	East
	Exp (B)	Exp (B)	Exp (B)	Exp (B)	Exp (B)
	(n=1,278)	(n=886)	(n=1,131)	(n=627)	(n=2,718)
Gender (female)	.89**	.53**	.54**	1.60**	.36**
Age	.54**	.49**	.50**	.46**	.55**
Mother speaks Turkish	0	1.93**	0	0	1.85**
Household head's education	1.82**	2.79**	2.66**	1.47**	2.53**
Mother accepts traditional gender role	.85**	.95**	.42**	.87**	.80**
Household poverty	.43**	.37**	.35**	.09**	.45**
Number of household members	.90**	.80**	.94**	.80**	.86**
** p≤0.01					

Table 4.8: Binary logit analysis by regions

According to the results of my analyses, several important differences among regions emerged. For example, being female was found to be a significant advantage for children in the North, where females were 1.6 times more likely to be in school, in contrast to all other regions. This finding could be explained by the more independent position of women in the North, as discussed in Chapter 1. In all other regions, however, being female had a significantly negative impact on school participation, with the highest impact in the East and the lowest impact in the West, as expected. In the East region, being female is associated with a 64-percent decline in the probability of school participation compared to an 11-percent decline in the West region. According to the results, the mother's ability to speak Turkish is associated with around a 90-percent increase in the probability of enrollment in the East and the South regions. The mother's ability to speak Turkish, however, was not found to be an important factor for the school participation of children in three of the five regions, the West, the North, and the Central. These regions do not historically include a high population of ethnic minorities, but it is known that many people with different ethnic backgrounds have migrated to these regions, especially to the big cities. However, it seems that these immigrants mostly learn Turkish to maintain their lives, as there are just a handful mothers (0.3 percent in the West, 0.3 percent in the North, and 0.1 percent in the Central) who could not speak Turkish in these regions, according to the data.

Another eye-catching finding is that the impact of poverty on school participation was lowest in the East and highest in the North. While being poor is associated with a 55-percent decline in the probability of school participation in the East region, it is associated with a 91percent decline in the probability of school participation in the North region. Although the East is economically the least developed part of the country, it seems that social factors such as household head's education and gender role attitudes are more important factors for schooling in this region. Hence, economic incentives may not solve the issue entirely in this region. Rather, some social interventions such as educating parents about schooling, using media and other resources to change gender perceptions, and establishing specific educational settings, such as girls' schools, in the region should be considered. This result could also be explained by the lack of variation in household wealth in the East (72.3 percent of the population in the East lives in one of the two lowest wealth quintiles).

The high impact of household poverty on school participation in the North may be explained in two different ways. First, this region is known for its important agricultural products, such as hazelnut and tea. Some families from less developed parts of Turkey temporarily migrate to this region in certain seasons to work in agriculture, since traditional agricultural methods, which require more human power, are generally used in the region because of the geographic difficulties and the types of products. As discussed before, employment in agriculture is often mentioned as an important drawback for the school participation of poor children in the literature. Therefore, it can be argued that children from poor families in the region may easily be employed in agriculture and give up schooling, especially in rural areas. The second reason for the strong impact of poverty on school participation in the region could be the geographic structure of the region itself. Because of the very mountainous territory and extensive forests, houses are built far away from each other, and even villages are spread out in wide areas in the region. Thus, accessing school can be very difficult and expensive, especially at the secondary level. This may put an additional burden on children from poor families and make it hard for them to continue their education when considering the fact that poor households are generally located in rural areas.

Finally, the results indicated that a mother's gender role attitude was a very important determinant of schooling for children in the Central region because a child whose mother agreed with the proposition "it is better to educate a son rather that daughter" had 58 percent less chance to be in school compared to one whose mother disagreed. Traditional gender role attitudes are often mentioned as an important drawback for children in the East region, but it seems that this is also an important issue in the Central region. This result is not very surprising because several

highly conservative cities are located in this region. Thus, this region also deserves attention regarding traditional gender role attitudes and their impact on school participation.

In sum, the results of analyses reported in this chapter make clear that school participation at both the primary and secondary levels is still a serious problem in Turkey. Descriptive statistics revealed clear and systematic associations between all individual-level independent variables and the school participation of children. The results of the binary logistic regression analyses also confirm these associations by indicating statistically significant relationships between all independent variables and school participation. According to the results, the mother's ability to speak Turkish and the household head's education were positively associated with school participation, while being female, being older, the mother's traditional gender role attitudes, household poverty, and residing in a large household were negatively associated with school participation.

The results of the analyses also indicated that there were some important differences in the relationship between independent variables and the school participation of children in different age groups. For example, the effects of being female and the mother's ability to speak Turkish are much stronger for younger children. In addition, household head's education was unexpectedly found to be negatively associated with school participation for younger children, while it has a strong positive relationship with school participation of older children. There are also several notable regional differences in terms of the relationship between several demographic and household factors and school participation. The positive relationship between being female and school participation and the extreme impact of poverty on school participation in the North region stand out. In addition, the Central region differs from the other four regions in terms of the strong negative relationship between mothers' acceptance of traditional gender roles and the school participation of children, while the East region differs from other regions with the highest negative impact of being female on school participation.

After introducing the associations between individual-level independent variables and the school participation of children in this chapter by using various descriptive and binary logistic regression analyses, the next chapter builds on the results of this chapter by taking community-level independent variables into account and applying multilevel modeling approach. Similar to analyses conducted in this chapter, analyses in the next chapter are also conducted for different age groups and regions.

CHAPTER 5

MULTILEVEL ANALYSES

In the first part of my analyses, the relationship between various demographic and household characteristics of children and their school participation was explored. Beyond the systematic and clear association between different independent variables and the school participation of children that was shown in the descriptive analyses, a statistically significant relationship between each independent variable and school participation was also found by using a more advanced statistical method, binary logistic regression. In this section, I introduce the results of HLM analyses in order to answer my primary research question: Are community-level factors significantly associated with school participation in Turkey, after controlling for individual- and household-level factors?

I first employed an unconditional model (a model with a random intercept only) in order to investigate if there was significant variation in the intercept across communities, as an indicator of the differences in school participation among the communities. In order to determine the amount of variation at the individual and community levels, intra-class correlation (ICC) was calculated based on the results of the unconditional model [See equation (3)]. ICC in this case provides a measure of the proportion of variance in the outcome at the community level [See equation (4) for the measurement of ICC].

After confirming that there were significant cross-community variations in the outcomes in the unconditional model, I next employed the random coefficient model [See equation (5)], to investigate if the variation at the second level still existed after introducing the level-1 independent variables in the model. I checked for significance in the variance at level-2 (community level) and calculated ICCs again for the models where there was significant variance.

If, after accounting for individual demographic and home background variables, I observed that community-level variations were still significant, then as the next step I employed the two-level HLM model in order to investigate which specific community variables were significantly associated with the school participation of children, controlling for demographic characteristics and household-level factors. For these models, the specific community variables I systematically included were average adult education, average gender role attitudes, type of residence (urban/rural), and community poverty.

The above analysis was conducted for the whole sample, and separately for different age groups and regions, similar to my binary logistic regression analyses. All of the analyses presented in this section were conducted via statistical software of HLM 6.08 (Raudenbush, Bryk, & Congdon, 2004).

5.1. Results of Unconditional and Random Coefficient Models

Results of the unconditional model for the whole sample showed that there were statistically significant differences across communities in Turkey in terms of children's school participation (Variance Component (VC): 0.499, $p \le 0.01$), as seen in Table 5.1. Based on this result, Intra-class Correlation (ICC) was calculated as 0.132. This means that 13.2 percent of the total variance in school participation was between communities, while 86.8 percent was within communities. This result confirmed that HLM was an appropriate method for this study. However, the unconditional models for different age groups showed different results. The results of the unconditional models indicated that there was not a statistically significant variation between communities in terms of the school participation of younger children, aged 8–13 years.

This result is not surprising as there were not many out-of-school children in this age group; schooling is compulsory at the primary level in Turkey. In the logistic regression analyses, however, gender and several household-level factors, such as household size, mother's ability to speak Turkish, and household poverty, were found to be strongly associated with the school participation of these children. Thus, it can be argued that variation in the school participation of children aged 8–13 mostly occurred at the household level rather than the community level.

Result of the unconditional model for the second age group (14–17 years) indicated that there were statistically significant (VC: 0.867, $p \le 0.01$) differences between communities in terms of children's school participation in this age group. According to this result, almost 21 percent of the total variance (ICC: 0.209) in school participation was between communities for this age group. For the whole sample and the second age group (14–17 years), which showed significant variation between their communities, random coefficient models were also employed in order to investigate if there still were significant variations among communities after introducing the individual-level variables into the models. A significant variation among communities was maintained in both groups, as seen in Table 5.1 and Table 5.2.

	VC	ICC***	
Whole Sample	0.499**	0.132	
Age 8–13	0.791	-	
Age 14–17	0.867**	0.209	
West	0.466	-	
South	0.643**	0.163	
Central	1.043**	0.241	
North	1.627**	0.331	
East	1.265**	0.278	

Table 5.1: The results of unconditional models

* p≤0.05, ** p≤0.01

*** ICCs represent the total variance in school participation between communities (calculated only for the significant VCs).

	VC	ICC***
Whole Sample	0.404**	0.109
Age 8–13	-	-
Age 14–17	0.378**	0.103
West	-	-
South	0.159	-
Central	0.470*	0.125
North	1.692	-
East	0.744**	0.184

Table 5.2: The results of random coefficient models

* $p \le 0.05$, ** $p \le 0.01$

*** ICCs represent the variance in school participation between communities after accounting for the individual level variables (calculated only for the significant VCs).

I also conducted HLM analyses separately in each region for children aged 14–17, as previous analyses showed that there was not significant variation between communities in terms of the school participation of younger children. Results of the unconditional models for different regions indicated that there were statistically significant variations between communities in terms of children's school participation in all regions, except the West region. However, significant variations between communities remained in only two regions, the East region and the Central region, after taking individual-level independent variables into account. Thus, it appears that communities matter less in terms of children's school participation within specific regions, and it is likely that the national results were driven by a few regions where there were cross-community variations in the likelihood of the school participation after accounting for the home background.

One reason for this could be the similarities among communities within the same region in terms of the level of urbanization, geographic structure, socio-economic and cultural differences, etc. Thus, it may be assumed that individual-level differences were more influential than communities in terms of the school participation of children at the regional level. In addition, sample size could be an issue when analyzing the data separately for each region because sample sizes decreased significantly when I separated the whole sample into different regions and dropped the children aged 8–13.

5.2. Analysis of Final HLM Model

Based on the results of the unconditional and the random coefficient models, I employed a final two-level HLM model to four groups(whole sample, children aged 14–17, and two regions, Central and East) that continued to show significant variations among their communities in terms of children's school participation, after taking individual-level variables into the account. For each group, two separate models were run. As explained in the methods section, because of the high correlation between poverty and adult education at the community level, I included adult education in the first model and poverty in the second model. Results of the two different models for the whole sample and for the children aged 14–17 are presented in Table 5.3.

Variables	Odds Ratios (Model 1)		Odds Ratios (Model 2)	
	Whole		Whole	
	Sample	Aged 14-17	Sample	Aged 14-17
Level-1 Variables				
Gender (female)	0.57**	0.68**	0.58**	0.69**
Age	0.52**	0.64**	0.53**	0.64**
Mother speaks Turkish	1.53**	1.41*	1.58**	1.47*
Household head's education	1.54*	1.77**	1.84**	2.14**
Mother's traditional gender role	0.95	1.00	0.97	1.03
Household poverty	0.59**	0.67**	0.56**	0.64**
Number of household members	0.90**	0.91**	0.89**	0.90**
Level-2 Variables				
Average Adult Education	15.17**	16.51**	-	-
Average Gender Role Attitudes	0.13**	0.12**	0.06**	0.05**
Urban Residence	0.91	1.02	1.04	1.16
Community Poverty	-	-	0.59	0.57

Table 5.3: The results of HLM analysis for whole sample and aged 14–17

* p≤0.05, ** p≤0.01

HLM analyses of the whole sample and the children aged 14–17 showed similar results with the logistic regression analyses in terms of the significance and the magnitude of the odds ratios for level-1 variables, with a few exceptions. One exception was that the odds ratios for household head's education decreased significantly in HLM analyses, compared to the logistic regression analyses for both groups. Introducing community-level adult education into the models may partly explain this result, because the magnitude of odds ratios for household head's education increased when community-level poverty was introduced to the models instead of community-level adult education. Compared to the results of binary logistic regression analyses, mother's ability to speak Turkish also became less significant for the children aged 14–17 in both HLM models. The biggest difference between the results of the logistic regression analyses and the HLM analyses at level-1 was, however, the mother's acceptance of traditional gender role attitudes. This variable became insignificant both for the whole sample and for the children

aged 14–17 in the HLM results. Other than these specific differences, the HLM results at level-1 were mostly aligned with the logistic regression analyses presented in the previous chapter in terms of the association between level-1 variables and the school participation of children.

In terms of the level-2 variables, it was found that there was a very strong and significantly positive relationship between average adult education in the community and children's school participation, after controlling for the individual- and household-level variables. As shown in Table 5.3, a child who lived in a community where all adults had at least a middle school education was 15 times more likely to be in school compared to a child who lived in a community that did not include any adult with a middle school or higher level of education. As seen in Table 5.3, the importance of the community-level adult education became much stronger for the children aged 14–17. Similarly, the average gender role attitude in the community was significantly associated with the school participation of children who lived in that community. This means that a child from a community that held more traditional gender role attitudes suffered more in terms of his/her school participation compared to a child who came from a very similar family but lived in a less traditional community. The importance of the community-level gender role attitudes for children's school participation also increased by the children's age, but the magnitude of the increase was relatively small.

Results of the HLM analyses also indicated that living in an urban or rural residence did not significantly influence the school participation of children after controlling for various individual-level and community-level variables. In the descriptive analyses, it was found that children who lived in rural areas were significantly disadvantaged in terms of their access to schooling, compared to children who lived in urban areas. Given this fact, the results of the HLM analyses implied that differences between rural and urban areas in terms of the school

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participation of children were not merely caused by the location itself, but may mostly have been derived from the household-level and community-level disparities between these locations. This result and interpretation, however, should be read with more caution since this variable is binary and is not similar to other level-2 variables in terms of the variation it contains.

Finally, my second models for both groups showed similar results with the first model in terms of both level-1 and level-2 variables. However, the new variable — community level poverty — that was added into the model instead of the community-level adult education did not seem to be an important factor for children's school participation, net of other community-level and individual-level variables. To the extent that this variable is seen as a proxy for a community's economic status, it can be argued that community-level economic factors such as the quality of the infrastructure in the community, the economic conditions of neighbors, the availability or ease of access to school, etc., were not important determinants of school participation in Turkey. Rather, families' own economic condition was an important factor that may influence school participation of children regardless of the economic condition of the community in which they live. This result also aligns with the previous finding that living in an urban or rural area is not significantly related to school participation.

As mentioned earlier, the final HLM model was also employed for the East and the Central regions. The results of HLM analyses for these regions are illustrated in Table 5.4. The results were mostly in line with the HLM results for the whole sample and for children aged 14–17, with a few differences. The child's gender, for example, was more strongly associated with school participation in both regions compared to the whole sample and to children aged 14–17, with a stronger association in the East region. This finding is aligned with the results of the logistic regression analyses presented in the previous chapter. In addition, for the Central region

the number of household members was not significant in both models, and the household head's education was not significant in the first model. More interestingly, household poverty became non-significant for both regions in both models. Accounting for community-level variables in the framework of HLM could have caused these results. In addition, the significant decrease in the sample sizes and lesser variation between households in terms of poverty levels in the same region could be the other possible explanations for these results.

Variables	Odds Ratios (Model-1)		Odds Ratios (Model-2	
	East	Central	East	Central
Level-1 Variables				
Gender (female)	0.33**	0.46**	0.34**	0.47**
Age	0.54**	0.49**	0.55**	0.50**
Mother speaks Turkish***	1.42*	-	1.44*	-
Household head's education	1.91**	1.94	2.06**	2.33*
Mother accepts traditional gender rol	e 0.89	0.57	0.88	0.57
Household poverty	0.89	0.68	0.93	0.69
Number of household members	0.91*	0.98	0.91**	0.97
<u>Level-2 Variables</u> Average Adult Education	42.38**	20.07**	-	-
Average Gender Role Attitudes	0.59	0.31	0.41	0.38
Urban Residence	1.17	1.16	1.31	1.23
Community Poverty	-	-	0.21**	0.33

Table 5.4: The results of HLM analysis for two regions (East and Central)

* $p \le 0.05$, ** $p \le 0.01$

*** The models for the Central region could not be run with the variable of mother's ability to speak Turkish, because there is only a handful mothers in this situation in the Central region.

In terms of the level-2 variables, average adult education was found to be strongly associated with the school participation in both regions, with a more dramatic form in the East region. This result was in line with the results of HLM analyses for the whole sample and children aged 14–17. However, it should be emphasized here that the association between average adult education and school participation of children was much stronger in the East

region. Given the fact that the East region is the least developed region of the country in terms of many socio-economic variables, children who live in this region are the most disadvantaged in terms of access to schooling. It seems, however, that having more educated adults in a community may eliminate the negative influence of different socio-economic factors, and may help with increasing the school participation of children in that community.

According to the HLM results for both the East and the Central regions, the average gender role attitude in the community was not significantly associated with the school participation, while this variable was found to be significant for both the whole sample and for children aged 14–17. This result seems surprising because the relationship between mother's acceptance of traditional gender roles and the school participation of children was strongest in these two regions according to the results of the binary logistic regression analyses. This surprising result may have been caused by the relatively lesser variation among communities at the regional level in terms of this variable. It is logical to assume that this variable has more variation between regions than within regions. In addition, the numbers of communities are relatively low for these regions, so this could be another reason for this result.

Another interesting result of the HLM analyses for the two regions was the significant association between community poverty and school participation in the East region, different from the results of other HLM analyses. As mentioned earlier, there was less variation in the East region compared to other regions in terms of household poverty, because almost three of four households lived in poverty in this region. Thus, it was found that household poverty had the weakest association with school participation in the East region among all regions at level-1. However, it seems that there was significant variation in community poverty in the East region, and living in an affluent community had a significant positive impact on students' school participation in this region. Given the fact that this region was the least developed part of the country, it can be argued that community-level economic factors such as the quality of infrastructure, economic conditions of neighbors, availability and ease of access to school, etc., may still have been important determinants of school participation of children in this region. In addition, given the strong impact of community-level adult education on school participation in the East region, this result may also have been affected by the high correlation between community-level adult education and community poverty.

In sum, the results of multilevel analyses showed that there were significant differences between communities in terms of the school participation of children in Turkey, with the exception of children aged 8–13. According to the results, living in a community with higher average adult education or with more positive gender role attitudes was strongly associated with the chance of participating in formal education. However, community poverty and urban residence were not found to be important determinants of school participation. According to the regional analyses, there were significant variations between communities only in the Central and the East regions, after accounting for individual-level variables. The results of HLM analyses for these regions show that average adult education in the community was also strongly associated with school participation in both regions. While average gender role attitudes in the community and urban residence were not significantly associated with school participation in both regions, community poverty was found to be significantly associated with the school participation of children in the East region. Most importantly, taken together the findings from this chapter underscore the importance of taking into account the child's context in order to better explain her likelihood of school participation at the secondary level in Turkey.

CHAPTER 6

DISCUSSION AND CONCLUSIONS

6.1. Summary of Findings

The primary purpose of this study was to investigate the association between socioeconomic community characteristics and school participation at both the primary and secondary levels in Turkey. Previous studies in Turkey had paid significant attention to the relationship between household factors and school participation, but the impact of community on the school participation of children had not been explored. Thus, this study attempted to fill this gap in the Turkish literature by using a large-scale, nationally representative data set, TDHS-2008. Data was organized at two levels, individual and community, and was analyzed by using appropriate statistical methods. In order to investigate the relationship between individual-level factors, such as gender, household wealth, household size, etc., and the school participation of children, binary logit models were employed. Then, the community-level factors of average adult education, community poverty, urbanization, and average gender role attitudes were also taken into account, and HLM analyses were conducted.

Results of the study confirm the findings of previous studies in terms of the relationship between household-level factors and the school participation of children in Turkey. Binary logistic regression analyses indicate that demographic characteristics of children (gender and age) and household-level factors (education of household head, household size, the mother's ability to speak Turkish, mothers' gender role attitudes, and household poverty) are significantly associated with children's school participation. All of the associations are in the expected direction and align with previous studies, both in Turkey and in other developing countries, as discussed in the literature review chapter. For example, girls, older children, children whose mother cannot speak Turkish, and children who live in poor households are more likely to be out of school compared to their counterparts.

Several important regional differences also emerged in terms of the relationship between the household and demographic characteristics of children and their school participation. These differences are explained by the socio-economic, demographic, and geographic disparities between regions. For example, the North region is the only region where girls are more likely to be in school compared to boys, net of other household characteristics. As mentioned in the first chapter, women generally are in charge of agricultural work and enjoy relatively higher independency in this region. Thus, the mother's more independent position may ease the school participation of girls in this region. In addition, males tend to out-migrate beginning at early ages because of the employment limitations in non-agricultural sectors. This may also force boys to drop out of school when they reach a certain age. In the North region, the negative relationship between household poverty and school participation is the strongest among all regions of Turkey. Geographic and agricultural structures of the region could be important factors causing this result. Having agricultural sectors that require high levels of human work force participation may encourage children from poor families to give up schooling and work in agriculture in the region. In addition, because of the rough geographic structure and extensive forests, houses are generally located far from each other and from city centers in the region. It can thus be very challenging for children to commute to school, especially in rural areas where most poor people live.

Being female had the strongest negative relationship with school participation in the East region. This result was expected because the East region is the least developed part of Turkey in terms of many socio-economic variables, and its residents are known for their strong traditional

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norms and patriarchal culture. Mothers' acceptance of traditional gender role attitudes, however, shows the strongest association with school participation in the Central region. Traditional gender role attitudes are especially known as an important drawback for girls' education in the East region, so this result is a little bit surprising. However, the Central region also has several very conservative cities, where girls' school participation is traditionally low, although it is socio-economically well developed compared to the East region. Thus, it is reasonable to have a strong relationship between the mother's traditional gender role attitudes and school participation in the Central region, after controlling for other important household-level socio-economic variables.

Finally, the mother's ability to speak Turkish is only significant in two regions, the East and the South, mostly because there are not many mothers who cannot speak Turkish in the other three regions. The East region is known as the most ethnically diverse region of Turkey and includes many people, especially women at older ages, who cannot speak Turkish. Although the South region is less diverse in terms of ethnicity, it receives many immigrants from the East region as do the West and some parts of the Central regions. Hence, it seems that people who have migrated to the South region may have some adaptation problems and preserve their language. Immigrant women in this region may also not learn Turkish if they generally live with other immigrant families and do not feel the need to learn Turkish. According to the results, children from these families experience significant school participation problems. The results also suggest that perhaps those who migrate to the West and the Central regions better adapt to their new places and learn Turkish, compared to those who migrate to the South region.

The results of the HLM analyses, in which the community-level variables are taken into account, include the biggest contribution of this study to the field. First of all, the results show

that there are significant differences between communities in terms of the school participation of children in Turkey. This is, however, only true for secondary school–aged children. The reason for this could be the fact that primary education is compulsory and only a few children in each community do not participate in primary education. Thus, there is not significant variation in school participation at the primary level between communities. In addition, attending primary school may be seen as a norm even in the less educated communities. For example, uneducated adults in the community may not see the benefit of attending higher levels of schooling and may not be good role models for children to continue their education, but they may at least encourage students to attend primary education to obtain basic skills. Traditional gender role attitudes in the community also may not be a big obstacle for younger children, because they are not yet seen as marriageable.

In terms of the specific community-level variables, average adult education and the average gender role attitudes in the community, which I use as a proxy for social context, were found to be significantly associated with school participation, while economic variables, community poverty and urbanization, were not significantly associated with school participation. These results also mostly align with the results of previous studies dealing with the relationship between community-level factors and school participation in other developing countries (Adams & Hannum, 2005; Binder, 1999; Chudgar, 2006a, 2008; Chudgar & Shafiq, 2010; Connelly & Zheng, 2003). While the strong relationship between social context variables and school participation is expected, finding no significant relationship between community-level economic variables and school participation is little bit surprising because urban and affluent communities often enjoy better educational and other community infrastructures. However, it can be argued that although these communities may offer better educational infrastructures for children, they

may also provide more opportunities to earn money by working in different informal job markets. Thus, these educational opportunities may in conflict with the child labor market (Chudgar & Shafiq, 2010). In addition, the direct costs of schooling, such as informal school fees, costs of school costumes, and costs of transportation and meals, could be higher in affluent communities. If there are a few poor families in an affluent community, these higher educational costs could be an important drawback for their children's schooling. Thus, after controlling for household economic situations, it seems reasonable that I did not find a significant relationship between community-level economic conditions and school participation.

The results of the study mostly confirm the sociological theories that argue that the social context can affect individuals' behaviors through different mechanisms. For example, finding a significant relationship between gender role attitudes in the community and the school participation of children supports the common argument that defines social norms as a significant contributor to educational exclusion (Govinda & Bandyopadhyay, 2010). In addition, sociological theories assign a very important role to adults in the community for children's development in that community. For example, it is argued that educated adults can help children in their community to learn acceptable behaviors better (Jencks & Mayer, 1990), and parents may also benefit from other adults in their community in terms of the education of their children (Lee & Croninger, 1996). The results of this study support these arguments by indicating a strong relationship between community-level adult education and the school participation of children, after controlling for many important individual-level variables. However, the results of the study cannot confirm the economic argument that schooling decisions of families are influenced by the general economic conditions in their communities (Gephart, 1997). Instead, it was found that the economic condition at the household level was strongly related to the school

participation of children, whether they live in a poor or an affluent community.

6.2. Policy Implications for Turkey

First of all, the results of this study in terms of the relationship between household factors and the school participation of children mostly align with previous studies. My results show that, for example, household wealth and parental education are still important determinants of school participation in Turkey. Therefore, the efforts that have been shown by the Turkish government, such as educating parents about the importance of schooling and providing financial support for poor families to send their children to school, especially for girls, should be continued. Regional analyses also show that there is more need for financial assistance in different forms, such as providing cash and free shuttles to schools, in the North region. In addition, programs that are initiated either by government or by non-profit organizations with the aim of supporting girls' schooling need to be continued, especially in eastern Turkey. Changing traditional gender role attitudes should also be targeted all over the country, with specific attention to the Central region.

The results of the study also suggest that children from different ethnic backgrounds should be paid special attention in terms of their school participation in the East and the South regions. The strong association between the mother's ability to speak Turkish and the school participation of children in these regions points to the significant role that language background may play. Thus, the government should take the necessary steps to increase school participation among children whose mother tongue is different than Turkish. First of all, women who cannot speak Turkish in the East and the South regions can be identified, and special education programs, similar to literacy programs, can be organized with the aim of teaching Turkish to these women. In the meantime, languages other than Turkish can be used to educate parents about the importance of schooling and inform them about educational process of their children if the parents, especially mothers, do not know Turkish. In addition, educational programs can be differentiated and adapted to the special needs of these children, especially in the early grades, because many of these children start their education with insufficient Turkish proficiency. Teachers should also be trained to teach Turkish, which is the official and the primary education language in Turkey, as a second language to these children. Similar policy changes may both encourage the families to send their children to school and minimize the drop-outs by reducing the hardships these children may encounter during the first years of their education.

The biggest contribution of this study to the literature is from exploring the association between community-level variables and the school participation of children in Turkey. The strong relationship between community-level adult education and school participation suggests that there is a need for community-level empowerment in terms of adult education. Likewise, the significant association found between average gender role attitudes in the community and the school participation of children confirms the need for educating adults about the importance of schooling for young children, especially for girls. Therefore, governments should focus on adult education at the community level as one of the methods for increasing the school participation of children. Communities where both the average adult education and school participation of children are low can be identified and the adults in these communities, including the ones who do not have school-aged children, can be educated about the importance of schooling. Formal degree programs, such as intensive primary and secondary education programs and literacy certificate programs, targeting adults specifically, can also be organized in these communities. Schools in these communities can be used for these programs during the after-school hours or on weekends. In these ways, both the relationship between community and schools can be improved and the benefits of formal education can be better realized by adults in the community. Adults'

involvement in formal education can also provide good examples for children in these communities. In this process, it is also important to focus on changing the gender role attitudes in the most traditional communities, given the importance of community-level gender role attitudes to the school participation of children.

The results of the study also show that living in a more affluent community and in an urban location are not significantly associated with school participation, after controlling for a variety of individual-level factors. It can, therefore, be argued that allocating all the resources to building better schools, roads, and other infrastructures may not be the most effective way to ameliorate the school participation problem. The results of the study imply that community-level social empowerment projects, such as increasing adult education, changing traditional gender role attitudes, educating community members about the importance of education, etc., should also be initiated in addition to traditional economic approaches. This proposition does not suggest stopping building better schools or improving roads to schools, but emphasizes the importance of the social context, which has not been paid enough attention by policy makers, for children's schooling. It is also necessary to differentiate the approaches for increasing school participation in different regions. For example, community poverty was only significant in the East region. This may suggest that there is still need for improving community-level infrastructures in certain areas of this least developed region of Turkey.

6.3. Broader Implications beyond Turkey

Beyond its unique contribution to Turkish literature, this study also is an important addition to the school participation literature in developing countries. First of all, the results of the study confirm the findings of several previous studies from different developing countries by indicating the significant role of social context in the school participation of children in Turkey. Consistent with the results of previous studies (Buchmann & Brakewood, 2000; Chudgar, 2006b; Chudgar, 2009; Dreze & Kingdon, 2002), the results of this study show that social context factors, such as the level of adult education and women's empowerment in the community, can be considered to be crucial for school participation of children in developing countries in addition to well-recognized household-level factors, such as parental education, household wealth, household size, etc.

Based on the findings of this study and previous studies from other developing countries, it can be suggested that developing countries should pay special attention to community-level interventions specifically targeting adults as another way to increase the school participation of young cohorts. The international community has placed great emphasis on the importance of increasing general school participation and eliminating gender disparity at both the primary and secondary school levels in developing countries, especially during the last two decades. Given the high number of out-of-school children and significant gender disparities in many developing countries, this emphasis should be continued. It is, however, also necessary to encourage developing countries to initiate policies to increase the level of adult education and empower women in society. Beyond their direct positive impacts on the socio-economic development of societies, these kinds of policies can also help to increase the school participation of children and reduce the gender inequalities in schooling. Therefore, international organizations, such as UNESCO, OECD, and The World Bank, should increase their emphases on the importance of adult education and women's empowerment in developing countries.

6.4. Suggestions for Future Research

The main findings of this study point to the significant association between communitylevel factors and the school participation of children in Turkey. As a first step in terms of exploring the influence of the social context on school participation in Turkey, this study makes a significant contribution to the literature. However, there is a need for more research on the impact of the social and economic context in which individuals live on their schooling behaviors in Turkey. In this study, data from the TDHS 2008 were used. TDHS 2008 is the latest implementation of the demographic and health survey series, which has been conducted every five years since 1968. Therefore, this study can be replicated by using data from the previous versions of the TDHS in order to see if the results are similar or how the effects of the social and economic context on school participation have changed over time. In addition, the Institute of Statistics of Turkey (IST) produces similar nationally represented data sets. Therefore, data from IST may also be used to replicate this study.

This study makes clear that the social context variables of the level of adult education and average gender role attitudes in the community are strongly associated with the school participation of children in Turkey. However, the relationship between economic context variables and school participation is more ambiguous. The results do not show a significant relationship between community poverty and urbanization, which are both thought to be indicators of the economic context, and the school participation of children. It should be noted, however, that these variables are not direct measures of economic factors such as the quality of community infrastructures and the prevalence of child labor. Similarly, the TDHS 2008 data does not include variables about schools and their instructional and infrastructural qualities. Thus, it will be useful for future researchers to use more direct measures of these factors, where available, in order to more clearly explore the relationship between specific economic context factors or school-level factors and the school participation of children in Turkey.

Finally, it should be noted here that qualitative approaches to school participation

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research are often ignored in both Turkey and other developing countries. Thus, there is also a need for more qualitative studies to reveal the reasons behind the relationships between various factors and the school participation of children indicated by statistical analyses. Although possible reasons are speculated on, based on existing theories and previous research, it is necessary to confirm these speculations with qualitative studies. Although there have been several qualitative studies that have explored the factors causing the low school participation of girls in the East region, this study indicates more research areas for qualitative researchers. For example, the reasons behind the strong association between household poverty and school participation in the North region, or the positive relationship between being female and school participation in the same region, could be uncovered by using a qualitative approach. Similarly, the strong association between traditional gender role attitudes and school participation in the Same region, and the significant relationship between mothers' ability to speak Turkish and school participation in the East and the South regions, could be important topics to focus on for future qualitative researches.

At the community level, the causal mechanism between the level of adult education and school participation of children can also be revealed by using qualitative research approaches. For example, the strong relationship between adult education and school participation of children in a community may be caused by the direct interactions between adults and children or by historically low numbers of educational facilities in the community. Thus, qualitative studies may help to uncover the real reasons beyond this relationship. It is also important to explore the possible mediating factors between adult education and school participation of children. This can be done either by using different quantitative methods (e.g., Structural Equation Modeling) or qualitative studies. Similarly, future studies may focus on the ways in which traditional gender
role attitudes influence school participation of children and how this influence can be eliminated.

APPENDIX

APPENDIX

Author(s)/Date-	Dependent	Independent	Data Set	Method
Study	Variable	Variables		used
Tansel (2002)	Years of	Age of children, Parents'	Household	Ordered
(Determinants of	schooling	education and self employment,	Income and	probit
school attainment of	attained	per adult expenditure, only	Expenditure	model
boys and girls in		mother/father, development of	Survey	
Turkey: individual,		street, location of residence	(1994)	
household and		(urban/rural and regions),		
community factors)		population density, distance to		
		metro centers and Istanbul,		
		provincial percentages of the		
		employed people in industry		
		and in the service sectors.		
Hisarciklilar (2002)	Final	Parental education and	Household	Censored
(A censored	grade	occupation, family income per	Labor Force	ordered
regression model for	attainment	capita, family size, existence of	Survey	probit
the educational		an elderly household member,	(1988)	model
attainment of boys		existence of a female relative,		
and girls in Turkey)		mother's participation in the		
		labor market, location of		
		residence (urban/rural and		
		regions).		
Smits and Gunduz-	School	Age of children, number of	-Turkish	Multivariate
Hosgor (2006)	enrolment	brothers and sisters, birth order,	Fertility	logistic
(Effects of family		extended family, parental	Survey	regression
background		education, parental occupation,	(1978)	
characteristics on		income level of family,		
educational		mother's age at the marriage,	-Turkey	
participation in		gender role attitudes, mother's	Demographi	
Turkey)		Turkish proficiency, regions,	c and Health	
		and urbanization.	Survey	
			(1998)	
Tomul (2008) (The	Final	Age, family size, parental	Household	Binary
relative effects of	grade	education, fathers' self	Budget	logistic
family socio-	attainment	employment, place of residence	Survey	regression
economic		(rural/urban and regions),	(2005)	
characteristics on		income per head.		
participation				
in education in				
Turkey)				

Table A1: Previous studies on educational attainment issue in Turkey

Table A1: (Cont'd)

$C_{a} = 1 (2008)$	Einel		TT	O_{1}
Goksel (2008)	Final	Children's age, parental	Household	Ordered
(Determinants of	grade	education, whether mother and	Income and	probit
school attainment in	attainment	father are self-employed,	Expenditure	model
Turkey		presence of father, presence of	Survey (1994	
and the impact of the		mother, total household	and 2002)	
extension of		expenditure, place of residence		
compulsory		(urban/rural), number of		
education)		children and percentage of		
		boys or girls in the household.		
Koc (2008)	Final	Parental education, working in	Household	Ordered
(Sibling composition	grade	agriculture (for both parents),	Labor Force	probit and
and educational	attainment	mother working or not, family	Survey	cencored
attainment of boys		income per capita, number of	(2006)	ordered
and girls)		brothers and sisters, birth		probit
		order, place of residence		models
		(urban/rural and regions).		
Kirdar (2009)	School	Location of residence	Turkey	Probit
(Explaining ethnic	enrollment	(urban/rural and region),	Demographic	estimation
disparities in school	and years	mother's age, literacy status	and Health	model
enrollment	of	and Turkish language	Survey (1993	
in Turkey)	schooling	proficiency father's years of	and 1998)	
in Turkey)	sencomig	education sibling composition	und 1990)	
		father's job type and wealth		
Davioglu	School	Age of children number of	Turkey	OLS and
Kirdar and Tansel	enrollment	siblings parental education	Demographic	2SLS
(2009) (Impact of	emonnent	presence of father wealth	and Health	2525
sibshin size birth		reside in city population of	Survey	
order and		city mother's age mother's age	(1008)	
sex composition on		at first marriage mother not	(1))0)	
school enrolment in		married mother tongue and		
urbon Turkov)		ragions		
$\frac{\text{urball rurkey}}{\text{Polyic of al}}$	Sahaal	Conder of shild income per	Household	Logistia
(Determinents of	School	Gender of child, income per	Dudget	
(Determinants of	enronment	head, education of nousenoid	Budget	regression
access to education		nead, mothers' education,	Survey	
in Turkey)		gender of nousenoid member,	(2003)	
		sibling size, social security		
		membership, agricultural		
D (2010)	G 1 1	activities, regions.	** 1 11	<u> </u>
Duman (2010)	School	Age of the child, composition-	Household	Censored
(Female education	enrollment	size of the family, parental	Income and	ordered
inequality in Turkey:		education, self-employment,	Expenditure	probit
tactors		rural-urban location,	Survey	model
affecting girls'		logarithmic disposable income	(2006)	
schooling decisions)		per head, and regional		
		dummies		

	Not Enrolled		Enrolled		
	Frequency	%	Frequency	%	Total
6	210	30.6	477	69.4	687
7	36	5.0	689	95.0	725
8	12	1.6	728	98.4	740
9	6	0.9	671	99.1	677
10	11	1.6	694	98.4	705
11	18	2.5	692	97.5	710
12	16	2.3	687	97.7	703
13	62	9.0	625	91.0	687
14	116	18.1	524	81.9	640
15	185	29.4	445	70.6	630
16	208	33.7	409	66.3	617
17	233	41.8	325	58.2	558
Total	1113	13.8	6966	86.2	8079

Table A2: School participation by age in original data set

Table A3: Age of children in the final data set

Age	Frequency	Percent	Cumulative Percent
8	740	11.1	11.1
9	677	10.1	21.2
10	705	10.6	31.8
11	710	10.6	42.4
12	703	10.5	53.0
13	688	10.3	63.3
14	640	9.6	72.9
15	632	9.5	82.3
16	620	9.3	91.6
17	560	8.4	100.0
Total	6675	100.0	100.0

Table A4: Omnibus Tests of Model Coefficients

		Chi-square	df	Sig.
Step 1	Step	1.414E9	7	.000
	Block	1.414E9	7	.000
	Model	1.414E9	7	.000
		/		

Nagelkerke $R^2 = 0.401 / Cox \& Snell R^2 = 0.213$

Table A5: Out-of-school girls and boys by age groups

	In sc	In school (%)		chool (%)
	Male	Female	Male	Female
8–13 years	51.5	48.5	23.7	76.3
14–17 years	52.4	47.6	43.6	56.4

Table A6: Out-of-school children by mother's ability to speak Turkish (Age 8-13)

Mother can speak Turkish	Out-of-school	In-school
No	9.5	90.5
Yes	1.9	98.1
Total	2.4	97.6

Table A7: Pearson's Correlation between level-2 variables

	ADULT_ED	Gender role	C_Poverty
ADULT_ED	1		
Gender role	380**	1	
C_Poverty	815**	.354**	1
* $p \le 0.05$, ** $p \le$	0.01		

Table A8: Kendall Tau's nonparametric correlation	
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	ADULT_ED	Gender role	C_Poverty
Urban	.488**	163**	555***

* $p \le 0.05$, ** $p \le 0.01$

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