



Heterogeneous relationships between family private education spending and youth academic performance in Korea[☆]



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ABSTRACT

Private education in Korea, a country with one of the largest private education systems in the world, is a double-edged sword: it is culturally and socioeconomically indispensable to the youth, but financially onerous to the family. An in-depth examination of this topic is warranted due to inconsistency in the relationship between informal education and youth academic outcomes. The current exploratory study attempted to clarify this ambiguous relationship between family spending on private education and self-reported academic performance scores using quantile regression techniques and a nationally representative sample of Korean youth ($N = 2,120$). The methodological advantage of using quantile regression is that it allows exploration of whether the magnitude of the association between family spending on private education and academic scores differs across quantiles of academic performance. The concave representation of relationship sizes across the distribution of academic scores indicated that the magnitude is greatest around the median of the academic performance distribution, whereas the size of the coefficient is smallest at the extreme ends. In other words, reliance on mean-based results may have masked the full picture of the heterogeneous association between family spending in private education and youth academic performance. Our findings may help direct targeted strategies for improving youth academic outcomes.

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1. Introduction

Educational investment is critical, particularly in adolescence, as academic performance during this period determines youth self-concepts, educational aspirations, and occupational choices. Investment in education may occur formally through the formal school system (e.g., middle school, high school) and informally outside the school through the informal private education system (e.g., one-on-one private tutoring, private learning institutions, private test preparation services, after-school cramming schools). Although their relative importance differs across cultures and contexts, traditionally, the formal school system has been a major source of education. Recently, however, the private education system has garnered growing attention due to its increasing role in youth development. In many societies, particularly in Asia, private education is at least as important as the formal school system. With its growing salience, however, private education has been considered a double-edged sword: it is culturally and socioeconomically indispensable to the youth, but it is financially onerous to the family. Further

investigation is warranted to determine whether the relationship between private education and academic performance is significant and if so whether the size of this association is heterogeneous.

1.1. Formal school education vs. informal private education

In most industrialized societies and a large proportion of developing countries, formal schools provide an influential social environment in which youth spend the bulk of their time. Formal school institutions are designed to perform a broad range of functions related to youth development in academic, psychological, and social domains. Thus, schools are a key arena for the education of youth in most societies (Steinberg, 2014). It is not surprising that a large corpus of research has examined the effects of various aspects of formal education on academic achievement, such as public spending (Wenglinsky, 1998), classroom size (Kwon, 2003; Levin, 2001), public vs. private (Kim, 2012; Witte, 1992), and teacher quality (Chung, Lee, & Kim, 2014; Wayne & Youngs, 2003).

Investment in education may occur outside the formal school system as well. Parents and youth invest in informal education in various forms, including one-on-one private tutors, small group tutoring, internet tutoring, and private test-preparation or learning institutions, also known as cram schools (Bray, 2009; Byun, 2014). The research literature has coined the term *shadow education* to describe private instruction in the informal education system because it mimics and

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supplements the formal school system (Manzon & Areepattamannil, 2014). The literature defines shadow education as “a set of educational activities that occur outside formal schooling and are designed to enhance the student’s formal school career” (Stevenson & Baker, 1992 p.1639). Instead of providing opportunities for development in a broad range of areas, private informal educational institutions primarily focus on strengthening youth performance in a specific targeted area of study, usually in key academic areas. However, in East Asian societies such as Korea, Japan, China, and a growing number of societies elsewhere around the globe, private education is an integral component of the educational sector (Bray, 2009; Manzon & Areepattamannil, 2014; Stevenson & Baker, 1992; Yang, 2012).

Despite the growing role of the private education system (Bray, 2009), the research literature has paid disproportionately greater attention to formal education. Few studies have shown that participation in private education is associated with modest improvements in academic performance, but others have identified no significant relationship (Choi, 2008; Dang, 2007; Lee, Lim, & Min, 2010; Liu, 2012). In some cases, study results even point to an inverse relationship between private education and academic outcomes (Cheo & Quah; Yang, 2012). To date, the mixed empirical evidence has prevented consensus about the effects of private education (Byun, 2014). Due to the relative dearth of research about family spending in private education and inconsistency in the association between private education and outcomes, an in-depth examination of this relationship is warranted.

The current study used quantile regression to clarify the ambiguous relationship between family spending in private education and academic performance among a nationally representative sample of Korean youth. Investment in Korea’s informal education system, one of the largest in the world (Bray, 2009), is equivalent to 34% of the annual governmental budget allocated to formal education (Statistics Korea, 2014a; 2014b). Driven by cultural, social, and economic demands, approximately 70% of all school-aged children currently participate in the private educational system (Statistics Korea, 2014a). Given the scale and intensity of private education, Korea provides an ideal context for thoroughly examining the relationship between family spending in private education and youth academic outcome (Byun, 2014).

1.2. Investment in private education: Korean context

At this time, private education is an indispensable part of the daily lives of children and parents, nearly equal with the formal education system in Korea (Yang, 2012). According to a recent government report on education spending (Statistics Korea, 2014a), approximately 70% of school-aged children and youth participate in private education for an average of 5.8 h per week. The primary purpose of participating in the private education system is to increase academic scores in a specific area of study on core subjects, such as mathematics and English (Statistics Korea, 2014a). In this sense, private education in Korea practices a narrow concept of education—to enhance academic performance in basic subjects over a short period of time using test-prep techniques. This is in contrast to the holistic definition of education—to advance intellectual knowledge and analytic skills, as well as encourage growth in personality, social capacity, critical thinking, citizenship, and culture—that is often adopted in the formal school system.

Cultural values for educational success, intertwined with socioeconomic conditions in Korean society may account for this phenomenon. Traditional Confucian values that exalt literary scholarship and its central role in social mobility (Seong, 1993) have bred a culture in which families possess high educational aspirations and are committed to prioritizing their children’s education (Zhou & Kim, 2006). As educational advancement is considered to be the most effective means of getting ahead in society (Zhou & Kim, 2006), Korean families do not hesitate to invest their resources in the private educational system (Lee & Kwon, 2011).

In addition to the cultural significance of education within the family, driven by Confucian norms, features of Korea’s current formal education system at the structural level reinforce youth participation in the private education system. Some of those conditions are centrally administered formal examinations for college entry; intense competition to enter prestigious universities; and clear links between exam scores, university acceptance, and future educational, occupational, and status opportunities (Stevenson & Baker, 1992). These characteristics have led Korean families to firmly believe that the college their child attends is directly linked to future employment opportunities and, more broadly, social and economic success.

Given the cultural emphasis and the enormous lifetime payoffs of educational outcomes, it is unsurprising that Korea has one of the largest private education industries in the world (Bray, 2009). Despite its importance, spending in private education has surfaced as a great financial burden to families. In Korea, the average monthly family spending on private education is approximately 350,000 KW (US\$ 350) among 8- to 19-year-olds participating in private education (Statistics Korea, 2014a). This amount of spending is not small, as reflected in a national survey of Korean youth and their primary caregivers, in which nearly 70% of parents reported that the costs for private education are a burden to the family budget (Ministry of Gender Equality and Family, 2014).

In sum, private education in Korea is imperative to youth academic development, but also burdensome to the family. The magnitude of the financial stress imposed by private education is so large that this family-level issue has been treated as a major national economic concern in the past several presidential campaigns (Yang, 2013). At the same time, however, families view private education as not a supplement or “shadow” to formal education, but rather as a necessity for academic advancement (Ihm, Woo, & Chae, 2008; Yang, 2006). Some youth rely more on after-school cram classes for academic advancement than on the formal school system (Kim & Kim, 2002). Clearly, family spending in private education is a crucial part of the lives of youth in Korea, with implications that expand beyond families to the national level in such areas as socioeconomic stratification and inequality (Yang, 2006). Hence, furthering the overall understanding of the role of private education is critical.

1.3. Mixed evidence on the role of education

Subjective evaluations of the benefits of private education suggest that, in general, both Korean parents and youth hold a favorable view of the effect of private education. Among primary and secondary school students, 70–80% reported experiencing better school grades with family spending (Kim, 2001; Kim, 2003). Although there is a significant relationship between private spending and its perceived benefits, whether investment in private education is actually linked with those anticipated effects is unclear. Despite large amounts of spending in youth education with the consequent burden to families, no strong empirical evidence confirms the anticipated academic benefits of private education (Yang, 2012).

A careful review of the literature suggests that the association between private education and academic performance is mixed and not well-established (Byun, 2014; Kim, 2003; Kim & Kim, 2002). Some research has identified a positive relationship between private education and academic attainment (Yang, 2013) and achievement (Kim & Lee, 2011; Lee & Lim, 2009; Sang & Baek, 2005) among youth. For example, in a nationally representative sample of first-year middle school students, family investment in education was associated with high math and English test scores even after controlling for a host of individual background characteristics, teaching quality, and individual learning activities (Lee & Lim, 2009). Conversely, another branch of research has failed to identify a strong link between private education and academic performance (Choi, 2008; Lee, Kim, & Yoon, 2004; Lee et al., 2010). For instance, in a national study of high school students, the statistical significance between investment in private education and entrance to

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