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Abstract

Chinese parents place a high value on their children's academic excellence and have high career aspirations for their children. Family socioeconomic status (FSES) and family expectations on children's future achievement play pivotal roles in children's academic achievement. Using data from the 2014 China Family Panel Studies (CFPS) and structural equation modeling techniques, the pathways of association between FSES and children's academic achievement through family expectations on children's future achievement, parenting strategies, teacher–student relationship, and academic self-regulation were examined. The sample included 802 families with children between 10 and 13 years (46% girls and 58.4% children from rural areas). Higher family SES was positively associated with children's academic achievement. Nurturant-involved parenting mediated the associations between FSES and children's academic achievement, and teacher–student relationship mediated the pathway between family expectations on children's future achievement and academic achievement. The association between family SES and children's academic achievement was stronger for boys than girls and for families in urban areas than rural areas. The study findings suggest that clinical and policy endeavors should pay attention to the increasing gap between low- and high- SES families and target efforts toward parent education and improving teacher–student relationship.

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INVOLVED PARENTING, TEACHER-STUDENT RELATIONSHIP, AND ACADEMIC
SELF-REGULATION IN CHINESE FAMILIES

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Dissertation

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Doctor of Philosophy in Human Development and Family Science

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Chapter 1: Introduction

China has become the world's second-largest economy, with a GDP growth rate averaging almost 10% a year since the country's economic reform and the opening up of its economy in 1978 (World Bank, 2019). Although more than 850 million Chinese have been lifted out of poverty, China's per capita income is only about a quarter of that of high-income countries. Around 373 million Chinese still live below the upper-middle-income poverty line of \$5.50 daily (World Bank, 2019). As a result of fast economic growth and changes, social issues such as income inequality, unbalanced development between urban and rural areas, and inadequate distribution of educational resources have emerged (Yang et al., 2014). Moreover, these issues have given rise to inequality in education, indicating that not every child with typical development can acquire the same education (Lei, 2018). With the spread of the enforcement of nine-year compulsory education and school expansion across China, the average number of years of schooling has significantly increased from 4.8 years in 1990 to 7.9 years in 2018 (Human Development Reports, 2018). However, educational inequality (e.g., educational gaps between urban and rural areas) has yet to be resolved (Li & Qiu, 2018). Therefore, Chinese educators and scholars have increased attention to the factors that contribute most to children's academic success (e.g., Fan & Chen, 2001; Li & Qiu, 2018; Teng, 2019; Zha & Hall, 2019). Building upon existing studies mainly conducted in the West, this dissertation aims to shed light on how family socioeconomic status (SES) and values influence children's academic achievement through associations with nurturant-involved parenting, teacher–student relationship, and academic self-regulation in the Chinese context.

Much relevant research has been dedicated to identifying the factors that contribute to academic achievement, including individual factors, such as self-regulation (e.g., Li & Qiu,

2018; Teng, 2019); family factors, such as parental involvement (e.g., Fan & Chen, 2001; Wang, 2017); and school factors, such as the quality of the teacher–student relationship (e.g., Wang & Cai, 2017; Zee et al., 2013). However, few studies have considered how the interplay of these factors influences children’s academic development in the Chinese context (Li & Qiu, 2018). According to Bronfenbrenner’s (1986, 1989) bioecological model a myriad of intrafamilial and extrafamilial systems shape a child’s developmental trajectories. Understanding and improving relationships within and between systems promote children’s school success. Thus, the child–family system (e.g., parents) and school system (e.g., teachers), which are the two essential components in the microsystem, should be simultaneously considered when studying how they operate in conjunction to shape children’s school experiences and academic success (Taylor et al., 2004).

In addition, studies have demonstrated that parents and teachers may not only directly but also indirectly influence children’s academic achievement through self-regulated learning (e.g., Baker, 2006; Hoover-Dempsey & Sandler, 2005; Wang & Cai, 2017). According to self-determination theory, self-regulated learning is identified as an essential ability that influences children’s literacy, reading, and mathematical performance (e.g., Bohlmann & Downer, 2016; Lin et al., 2016). Moreover, self-regulated learning, which claims that learners can be autonomously motivated when involved in school activities, have better problem-solving and coping skills, and put in more effort when facing setbacks, has been demonstrated as a good indicator to predict student academic success (Ryan & Deci, 2009; Wang & Pomerant, 2009; Wang & Cai, 2017). Given its importance, nurturing academic self-regulation in an autonomous, supportive, and secure environment is not only the parents’ but also the school’s job (Wang & Cai, 2017). However, the existing literature provides unclear information on the unique and

intertwined ways in which parents and teachers function to influence children's self-regulation and affect their academic achievement, especially in the Chinese context.

Recently, an increasing number of studies regarding parental influence on children's academic outcomes have shifted their focus from "what parents do" to "who parents are" (e.g., Li & Qiu, 2019; Taylor et al., 2004; Yamamoto & Sonnenschein, 2016; Zha & Hall, 2019). Taylor et al. (2004) argued that the "what parents do" perspective focuses on parenting behaviors and parent-child relationships in children's academic socialization, while the "who parents are" perspective emphasizes the socioeconomic and cultural characteristics of parents and their associations with children's academic outcomes. On the one hand, family SES has been recognized as an important factor in determining parental behaviors in education and children's academic achievement in Chinese families (Deng & Treiman, 1997; Li, 2006; Liu, 2008). For example, parents in middle- or high-SES families are more likely to discuss school-related issues and concerns with their children, engage in school activities, and provide homework support, which influences their children's academic performance. On the other hand, family SES has been found to have an impact on children's school quality. For instance, children of higher-SES families are more likely to attend better schools than children in lower-SES families (e.g., Li & Qiu, 2018; Teng, 2019; Wen, 2006; Wu, 2013). However, the scholars pointed out that supportive school climates, such as positive teacher-student relationships, could be a protective factor for children from low-SES families to buffer the negative effect of low-income family environments on their academic achievement (Teng, 2019). To my knowledge, very few studies have examined the effects of family SES on parenting behaviors in education and teacher-student relationships at the same time (Li & Qiu, 2018).

In addition to family SES, studies have argued that cultural values could be particularly powerful for children's academic achievement in some ethnic groups (e.g., Chinese) because they may buffer the negative effects associated with low SES (Yamamoto & Brinton, 2010; Yamamoto & Sonnenschein, 2016). Education has been highly valued in China for centuries and is very important for Chinese families (Gu, 2008). Traditional Confucianism influences Chinese parents, which is why the role of educational success in a person's life is so valued. For instance, educational success can help one reach a higher social status, get a better job, maintain a better marriage and relationships, and achieve a better life overall. Moreover, unlike Western culture, Chinese culture views individual achievement and success as family affairs rather than just personal success (DeCuir-Gunby & Williams-Johnson, 2014). Therefore, the beliefs of the importance of educational success and future achievement may shape Chinese parents' parenting behaviors and practices (Wang et al., 2019). Additionally, unlike students in Western countries, Chinese students show more respect and obedience to their parents and teachers due to the cultural value of filial piety. Chinese students tend to perceive learning as a moral endeavor, which makes them value academic achievement and motivates them toward academic success (Wang & Oimerantz, 2009). So far, no existing research has examined the mechanisms of how family SES and values influence children's academic achievement through individual, parent, and teacher factors in the Chinese context.

Given the literature gaps mentioned above, the main goal of the present study was to build on the existing literature by exploring how family SES is related to children's academic achievement through the associations with family expectations on children's future achievement, parental involvement, teacher-student relationship, and self-regulation in the Chinese context. This study investigated: (1) the direct and indirect associations between family SES, family

expectations on children's future achievement, nurturant-involved parenting, teacher-student relationship, academic self-regulation, and children's academic achievement; (2) the moderating role of gender and household registration (urban/rural) in the associations between family SES, family expectations on children's future achievement, nurturant-involved parenting, teacher-student relationship, academic self-regulation, and children's academic achievement.

Chapter 2: Literature Review

Even though China has become one of the world's most influential economies, little is known in other countries about how its education system works or how Chinese students learn and achieve academic success. This chapter provides an overview of education in China today, including mechanisms that the government uses to manage its education system, as well as current policies and issues. Given that Hong Kong and Macau have separate education systems from mainland China, this study focuses on education in mainland China. Education has been highly valued in China for centuries, and achieving educational success is a central goal for Chinese families (Gu, 2008). Thus, academic achievement is viewed as one of the most important educational outcomes for Chinese children (e.g., Sun et al., 2013; Wang & Cai, 2017).

Studies have demonstrated that academic achievement is the product of a complex interplay of numerous variables, including individual factors, such as self-regulation (e.g., Pintrich & Zusho, 2002; Schunk & Zimmerman, 2008; Teng, 2019); family factors, such as parental involvement (e.g., Fan & Chen, 2001; Hill & Tyson, 2009; Li & Qiu, 2018; Taylor et al., 2004); and school factors, such as the quality of the teacher–student relationship (e.g., Wang & Cai, 2017; Zee et al., 2013). However, such findings are primarily based on empirical studies conducted in the West, and their relevance to other countries, such as China, remains unclear. This chapter also discusses the research literature on the factors that contribute to children's academic achievements, including parental involvement, teacher–student relationships, and academic self-regulation. The emphasis is on studies that have been conducted on Chinese families.

The Chinese Context of Education

China has the largest educational system in the world (Organization for Economic Co-operation and Development, 2016). According to 2017 data from the National Bureau of Statistics of China, there are over 270 million students and around 16 million teachers in about 51 million Chinese schools and higher education institutions. The educational system in China is not only immense but also diverse (Organization for Economic Co-operation and Development [OECD], 2016). It covers 23 provinces; five autonomous regions: Guangxi, Ningxia, Xinjiang, Inner Mongolia, and Tibet; four municipalities: Beijing, Shanghai, Tianjin, and Chongqing; and two special administrative regions: Hong Kong and Macau. The Chinese education system is managed and maintained at the state level. Each of the provinces, autonomous regions, and municipalities is directed by their department of education boards, which together come under the supervision of China's Ministry of Education (MOE). In recent years, the MOE in China has shifted its role from being in direct control of the educational system to monitoring the general education policies, laws, plans, and budget allocation of the nation at the macro level. The local departments of education are now charged with fulfilling the primary responsibilities of making and delivering education plans.

Chinese students generally complete three years of kindergarten, six years of elementary or primary school, three years of junior middle school, and three years of senior middle or high school. In some areas of China, such as Shanghai, children spend five years in elementary and four years in junior middle schools. Nine-year compulsory education, including an elementary school and junior middle school education, is mandatory and free for all Chinese students. Schools may charge minimal fees per semester for textbooks, amounting to around 300 CNY, snacks, and additional charges for extracurricular activities. Because education in China is

mandatory and universalized, the gross enrollment ratio for primary education was nearly 100% in 2017, while the gross enrollment ratio for secondary education was 103.5% (National Bureau of Statistics of China, 2017). After completing nine years of compulsory education, Chinese students can choose whether to attend regular senior middle schools or secondary vocational schools, such as technical secondary, adult secondary, and crafts schools. Admissions to senior high schools depend on students' scores on the senior high school entrance examination called *Zhongkao*. This examination is not as competitive as the National Higher Education Entrance Examination, *Gaokao*, which is necessary for students who want to apply to top-ranked colleges in the country.

Due to rapid urbanization and fast economic growth, income inequality has become very apparent between low- versus middle- and high-SES families (Yang et al., 2014; Wu, 2013). Families with middle and high SES take advantage of their economic resources and social power to get better education opportunities for their children (Treiman & Yip, 1989; Yang et al., 2014). On the one hand, parents from middle- and high-SES families can send their children to good schools and provide greater educational opportunities (Yang et al., 2014), while on the other hand, due to economic pressure and employment discrimination based on family background, many children from low-SES families have to give up opportunities for higher educational achievement, taking tuition costs and relevant expenses into consideration (Breen & Goldthorpe, 1997; Yang et al., 2014). Thus, family SES has been recognized as an important factor not only to increase education inequality but also to determine students' academic achievement in China (Deng & Treiman, 1997; Li, 2006; Liu, 2008; Wu, 2013). For example, parents in middle- and high-SES families are more likely to discuss school-related issues and concerns with their children, engage in school activities, and provide homework support, which in turn is associated

with better academic performance. Li and Qiu (2018) argued that Chinese parents “compete for high-quality educational opportunities for their children and better educational opportunities lead to better academic performance” (p. 1).

Research has demonstrated that family SES has a great impact on the standard of children’s schools; for instance, children from higher-SES families are more likely to attend better schools than those in lower-SES families (e.g., Li & Qiu, 2018; Teng, 2019; Wu, 2013). However, supportive school climates are a protective factor for children from low-SES families to buffer the negative effect of low-income family environments on their academic achievement (Teng, 2019). Teng (2019) further asserted that a positive teacher–student relationship in low-performing schools might improve low-SES students’ achievement and decrease the education gaps among Chinese schools.

Parental Involvement

The Framework of Parental Involvement

An extensive body of research has examined the role of parental involvement, both at home and in school, on children’s academic achievement (Fan & Chen, 2001; Hill & Tyson, 2009; Kim, 2020) in elementary schools (e.g., Hung, 2007; Phillipson & Phillipson, 2012; Xu et al., 2010). However, the strength of this relationship is less clear during the transition from elementary to middle school (Boonk et al., 2018; Hill & Taylor, 2004; Hill & Tyson, 2009; Taylor et al., 2004). Although parental encouragement and support for children’s academic activities were found to be positively associated with students’ academic achievement (e.g., Hung, 2007; Rogers et al., 2009), inconsistent findings, including no associations or negative associations, were presented regarding the relationship between homework involvement and academic achievement, especially in upper elementary schoolers (e.g., Driessen et al., 2005; Lee

& Bowen, 2006; Rogers et al., 2009). Additionally, no evident benefits of school involvement, such as participation in school activities, on academic achievement were found in the elementary school year in the Chinese context (e.g., Stright & Yeo, 2013; Xu et al., 2010).

It has been argued that parental involvement is a multifaceted construct where parents can engage in many different ways to promote their children's learning at home and in school (e.g., Epstein & Sanders, 2002; Grolnick & Slowiaczek, 1994; Hill & Tyson, 2009; Ho, 1995; Hoover-Dempsey & Sandler, 1995, 1997; Kim, 2020; Wang & Cai, 2017). Parental involvement represents a wide variety of beliefs, attitudes, and behaviors, including parental expectations of children's achievements, communication with children about school, rules related to homework, and parents' participation in school events (Fan & Chen, 2001). However, the definition and operationalization of parental involvement are not clear and are less consistent across studies.

The operationalization of parental involvement has been informed by different conceptual frameworks. One widely used framework is Epstein's (1992, 1994) typology, which defines six types of parental involvement: (a) parental child-rearing skills, (b) parent-school communication, (c) school-based volunteer activities, (d) home-based learning activities such as checking on homework and other curriculum-related activities, (e) participation in schools' decision-making, and (f) collaboration with the school community. Epstein's (1994) typology tends to address parental involvement within the school context, aiming to enhance the link between the family and the school to facilitate parental school-based involvement (Kim, 2020). However, Epstein's (1994) typology is a framework based more on Western culture that emphasizes parent-school relationships, and such school-oriented involvement is more applicable to American parents (Chavkin & Williams, 1993; Eccles & Harold, 1996).

Another framework is Grolnick and Slowiaczek's (1994) three-dimensional model, which includes behavioral, cognitive–intellectual, and personal involvement. Behavioral involvement has school-based and home-based involvement practices, such as volunteering at school, homework help, and parent–school communication, which is similar to Epstein's typology framework. Grolnick and Slowiaczek (1994) pointed out that cognitive–intellectual involvement is an essential component of parental involvement. This concept centers on the idea that parents provide educationally stimulating experiences and activities for children. Activities such as reading books with children and taking them to libraries and museums seem to be indirectly related to school education but contribute to intellectual enrichment and help children learn useful skills for school (Grolnick & Slowiaczek, 1994). The third aspect of parental involvement involves personal involvement, reflecting parental socialization in terms of the value and utility of education.

Both frameworks were designed and developed in the early 1990s to address the policy issue that parental involvement should be encouraged and promoted. Influenced by the No Child Left Behind policy of 2001, which further targets parental involvement, especially for low-income and minority parents in public schools, a growing body of research in the United States during this period focused on the importance of school-based parental involvement in children's academic achievement.

Researchers have indicated that Asian parents are not highly involved in school-based activities (Gu, 2008; Ho, 1995; Kim, 2020). Instead, they tend to spend more time communicating with their children about school activities at home and checking their children's homework (Kim, 2020; Wang & Cai, 2017). Noting this, Ho (1995) pointed out that parental involvement should be conceptualized as both home-based and school-based. According to Ho

(1995), home-based parental involvement includes activities such as talking about school issues with children and assisting them with school assignments at home. School-based parental involvement includes parental participation in school activities, which can include parent–teacher conferences, volunteering at school, and school events.

Pomerantz and Moorman (2010) also distinguished between school-based and home-based parental involvement. School-based parental involvement was defined, similar to Ho’s (1995) definition, as parents’ participation in the school environment, such as talking to teachers and volunteering at school. However, Pomerantz and Moorman (2010) stated that the benefits of home-based involvement on children’s academic outcomes are mixed in the literature, and the researchers have used the different constructs of home-based involvement to examine its associations with academic outcomes. Pomerantz and Moorman (2010) proposed two subtypes of home-based parental involvement: direct and cognitive–intellectual home-based parental involvement. According to their study, direct home-based parental involvement referred to parental activities that were directly related to school, such as helping children with school-related assignments and talking about issues related to school. Cognitive–intellectual involvement referred to parental practices that were indirectly related to schools, such as reading books with children and taking them to libraries and museums. This concept was developed from Grolnick and Slowiaczek’s (1994) three-pronged framework of parental involvement. Given the different definitions and constructs of home-based involvement, more recent studies have switched their attention to exploring the different, subtler forms of “voluntary” parental engagement in the home environment, addressing that parents are involved in children’s educational process naturally (Hill & Tyson, 2009; Jeynes, 2010, 2018; Wilder, 2014).

In addition to home-based and school-based involvement, the concept of academic socialization has received growing attention to help understand how parents influence children's schooling through parent-child interactions (Bæck, 2017; Hill & Tyson, 2009; Kim, 2020; Suizzo & Soon, 2006; Taylor et al., 2004; Wilder, 2014). Taylor et al. (2004) described academic socialization as a multidimensional construct, encompassing:

... the variety of parental beliefs and behaviors that influence children's school-related development. Parents are considered to be the primary agents of child socialization. The process by which parents shape a child's behaviors, attitudes, and social skills so that the child will be able to function as a member of society is broadly encompassed by the term socialization. (p. 163)

Suizzo and Soon (2006) identified three dimensions of parental academic socialization. The first dimension was the emotional support of children's academics. For instance, parents seem proud when a child learns to do something by themselves. The second was demanding hard work, for example, when parents put high demands on the child for school grades. The third was active involvement, such as whether the parents offered to help the child with their homework. Emotional support and active involvement were rated as the most frequent practices all parents engaged in, including those from European American, Latino, African American, and Asian American communities. However, demanding hard work was rated much higher by Asian American parents than by those in the other ethnic groups. Hill and Tyson (2009) conducted a meta-analysis to evaluate the relationship between parental involvement and students' academic performance in middle school. According to the authors, academic socialization included parents' communicating with children about their expectations for academic performance and values for education, helping their children foster educational and occupational aspirations,

planning for their future, and discussing learning strategies. Hills and Tyson (2009) highlighted that academic socialization as a parental involvement strategy is age-appropriate, especially for the development stage of early adolescence. Academic socialization is a more significant predictor of children's academic achievement than home- or school-based involvement in adolescence. Hattie (2009) also found that academic socialization is an important predictor of adolescents' academic performance.

Bæck (2017) summarized the literature review on the academic socialization of children and contended a large number of the existing studies on parental involvement are preoccupied with distinguishing, assessing, or comparing its different forms. Bæck (2017) pointed out recent studies have developed the concept of academic socialization beyond merely an aspect of parental involvement. It is a more specific process that reflects how parents interact with their children through conversations, emotional responsiveness, and active participation to socialize them into a form of academic culture and further influence the child's school-related outcomes.

Based on several recent meta-analysis studies on parental involvement in both the U.S. and Asian societies (Hill & Tyson, 2009; Kim, 2020; Wilder, 2014), all types of parental involvement examined in past studies can be categorized into either of the three types: (a) school involvement, such as attending parent-teacher conferences, volunteering school activities, and communicating with school teachers; (b) home involvement, such as parent-child communication about the school, homework assistance, and reading with children; and (c) academic socialization, which encompasses a variety of parental beliefs and behaviors in education, such as expectations and aspirations, attitudes and values toward education, and emotional responsiveness. In my dissertation, these three categories will be closely followed to capture the characteristics of parental involvement in Chinese families.

The Nature of Parental Involvement in Chinese Culture

Most prevailing conceptions of parental involvement (e.g., Epstein, 1992, 1994; Grolnick & Slowiaczek, 1994) are derived and tested using European American families, which highlights the value of engaging in school events and establishing a positive relationship with teachers. However, studies have found cultural variations in the dimensions of parental involvement (e.g., Huntsinger & Jose, 2009; Kim, 2020; Lau et al., 2012; Sy & Schulenberg, 2005). Sy and Schulenberg (2005) found that European American parents were more likely to engage in school activities and events than Asian American parents with kindergarten children. However, Asian American parents tended to invest more time and effort into fostering children's early academic skills and providing a supportive learning environment at home. Similarly, Huntsinger and Jose (2009) found consistent results: Chinese American parents focused more on teaching their children at home, while European American parents tended to volunteer more in schools. The most recent meta-analysis study on the relationship between parental involvement and achievement (Kim, 2020) evaluated 15 studies in East Asian societies, including those in mainland China, Hong Kong, Macau, Taiwan, Singapore, Korea, and Japan, that share similar Asian cultural values and beliefs. The meta-analysis suggested that Asian parents are less involved in school and more heavily involved at home. All these findings provide a clear message that Chinese parents, like other Asian parents, are more involved in academics at home to facilitate their children's learning. The cultural values and education system deeply influence such variations in the types of parental involvement.

Chinese society believes that educational success can help one attain a higher social status, get better jobs, maintain marriages and relationships better, and live a better life on the whole. Education has been highly valued in China for centuries and is very important for

Chinese families (Gu, 2008). On the one hand, parents are influenced by traditional Confucianism, which attaches great significance to the role of the teacher in education; many Chinese parents trust teachers as experts who know how best to educate children in the school setting. Chinese parents try to maintain harmonious relationships with teachers, show respect, and avoid unnecessary conflict. On the other hand, the educational system in China is highly standardized, uniform, and centralized (Gu, 2008). The MOE in China determines the general educational policies and curricula that are carried out universally in schools across the country. Although variations in curriculum requirements and content exist, all students in the same grade in most provinces use the same prescribed textbooks and take similar exams. Academic success is not only an important goal for students but also a way for schools to increase their social reputation in China. Such a strong academic-oriented and structured education system leaves little room or freedom for parents to be actively engaged and involved in schools. There is a clear separation between the functions of the school and the home in contemporary Chinese society (Gu, 2008). Schools tend to hold the primary responsibility of developing children's academic skills, whereas parents are more likely to cooperate with schools by providing a supportive learning environment at home. More specifically, Chinese teachers and parents tend to work in a separation model. Teachers expect parents to be the primary educators, facilitators, and supporters to foster their children's learning at home. Furthermore, Chinese parents are used to accepting these roles and assisting teachers from home. Therefore, many studies that have examined Chinese parents' involvement have found that Chinese parents have more home-based involvement than school-based involvement (Fan & Chen, 2001; Gu, 2008; Kim, 2020).

In addition, although studies have found an overall positive association between parental involvement and student achievement, not all types of parental involvement show a similar

positive impact (Fan & Chen, 2001; Hill & Tyson, 2009; Kim, 2020). For example, school-based involvement demonstrates a stronger impact on student achievement in American than in Asian families (Hill & Tyson, 2009; Kim, 2020). Moreover, there are mixed findings on the effect of homework help on academic achievement across cultures (Fan & Chen, 2001; Hill & Tyson, 2009; Wang & Cai, 2017; Kim, 2020). Academic socialization has been identified as the strongest factor influencing student achievement in late elementary and middle schools (Hill & Tyson, 2009; Kim, 2020; Taylor et al., 2004). The meta-analysis conducted by Kim (2020), which examined 15 recent studies in East Asian societies, provides a similar but more precise conclusion regarding the impact of parental involvement in Chinese and other Asian families. Kim's (2020) meta-analysis demonstrates that school involvement has the weakest impact on student achievement in Chinese and other Asian families. Additionally, home-based involvement, such as directly checking homework, indicated a negative association with achievement.

In contrast, monitoring the homework by checking whether the homework is completed or parental supervision over homework through setting rules about watching TV, for instance, indicated no significant association with school achievement. Another subtype of home-based involvement, referred to as intellectual enrichment activities, such as visiting museums and libraries, was positively related to academic achievement but did not significantly influence student achievement. One reason is the test-driven exam curriculum in China and other Asian countries; students don't have large amounts of leisure time to participate in activities outside the school with their parents (Kim, 2020; Kim & Fong, 2013). Surprisingly, academic socialization, such as communicating about school and discussing educational beliefs and expectations, is the strongest factor affecting students' academic achievement in Chinese and other Asian families

(Kim, 2020). This strength of the relationship was found to be higher in elementary schools than in middle school levels, which is contrary to the general findings of Western studies (Jeynes, 2007; Wilder, 2014). In China, this might be because students in middle schools already have a more concrete academic plan; they have to pass *Zhongkao*, which is the senior high school entrance examination, to choose the next educational institution they wish to attend. The strict rules, endless homework and exams, and constant academic pressure lead middle schoolers to become very academically oriented, with little space for parents to actively engage in their children's academic learning, whether in school or at home. However, elementary schools, especially the late grade levels, are considered the key stage for Chinese students because they begin to be distributed into different academic levels at this stage. Students' educational pathways crystallized during this period (Grolnick & Slowiaczek, 1994). Chinese parents still try to be involved in achievement in various ways to enhance their children's academic performance at this stage (Zong et al., 2018).

Based on the findings discussed above, the characteristics of parental involvement in Chinese families are clear. First, Chinese parents are less likely to be involved in school activities, and this dimension of parental involvement doesn't show a significant impact on student achievement. Second, home involvement, such as direct homework help, may negatively influence students' academic performance. Third, academic socialization is most strongly related to achievement. All these relationships are stronger in elementary school than in middle school.

Given the characteristics of parental involvement in the Chinese context, my dissertation will focus on two dimensions of parental involvement—home involvement and academic socialization—in elementary school education. However, there is no clear definition or construct of the broad concept of academic socialization. There is debate whether Asian parents engage in

alternative ways of involvement that are not well captured by the current framework (Kim, 2020; Kung & Lee, 2016; Wang, 2017). Influenced by the cultural beliefs of filial piety and the one-child policy, Chinese parents believe that helping children with educational success is part of their responsibilities, and they have very high academic expectations of their children. For this reason, parents and even grandparents generally spend a large amount of time, money, and energy fostering the child's academic development. Thus, such cultural perspectives may shape parental involvement in different ways.

Suizzo and Soon (2006) were the first to identify emotional support as a part of academic socialization because such interaction can help parents indirectly communicate with their children about their beliefs and values of education and promote their children's academic learning. Wang (2017) found that parental involvement in leisure activities was positively associated with students' academic learning. Family leisure involvement includes activities such as playing games, watching movies together, and talking about everyday life. Wang (2017) contended that such involvement not only provides entertainment and much-needed autonomy from the influence of teachers but also is a way to enhance emotional attachment between parents and children, both of which are very important for developing children's learning attitudes and behaviors. In addition, influenced by the cultural values, "*guan*," literally translated into "govern" and "discipline," Chinese parents' involvement is accompanied by heightened control. However, a recent Chinese study (Wang, 2017) interpreted *guan* as a way parents express love, highlighting that Chinese parental involvement needs to be reconstructed to include practical and psychological support (Kung & Lee, 2016; Wang, 2017).

Recently, some Chinese scholars (e.g., Wang et al., 2019; Zhang et al., 2020) used a new term, nurturant-involved parenting, to capture parental involvement in both practical and

psychological support in the Chinese context. The original definition of nurturant-involved parenting characterizes the parenting style as “warmth, supportiveness, low hostility, and low rejection” (Weymouth et al., 2019). This concept was used and developed in Wang et al. (2019)’s study using the 2012 wave of CFPS to measure two dimensions of nurturant-involved parenting, including emotional support and instrumental support in the Chinese context. The study revealed good factor loadings for the items, ranging from .46 to .76. The reported Cronbach alpha coefficient for emotional support and instrumental support was .78 and .72, respectively, indicating high reliability. Similarly, in Zhang et al. (2020)’s study, the researchers examined two dimensions of nurturant-involved parenting, including emotional support and instrumental support, using 2014 wave of CFPS. The reported Cronbach’s alpha for emotional support and instrumental support was .72 and .62, respectively.

Overall, the present literature review suggests that the current framework of parental involvement needs to be extended to better capture it in different cultures. Therefore, my dissertation used the term nurturant-involved parenting, addressing academic-oriented emotional support and instrumental support as the essential dimensions of parental involvement to evaluate its relation to Chinese children’s academic achievement.

Teacher–Student Relationship and Academic Achievement

Besides parental influence, researchers believe that the influence of school on children’s learning development grows as their level of schooling increases (e.g., Alves et al., 2017; Connor & McCartney, 2007; Longobardi et al., 2016). Initially, much of the relevant research addressed how the school climate influences parental behaviors in children’s schooling, such as teacher–parent relationships (e.g., Eccles & Harold, 1996; Taylor & Clayton, 2004). In recent decades, a growing number of studies have focused on the classroom context in which school-related

academic and social learning takes place (e.g., Avant et al., 2011; Fraser, 1994; Fraser et al., 2010; Pianta et al., 2008; Toren & Seginer, 2015). As such, the teacher–student relationship has been indicated as a predictor of children’s school success (e.g., Baker, 2006; Pianta, 1999; Toren & Seginer, 2015). The quality of the teacher–student relationship strongly predicted children’s achievement even after controlling for powerful child and family factors (Conner & McCartney, 2007).

Students who perceive a positive relationship with their teachers show increased motivation and willingness to learn (Baumeister & Leary, 1995; Prino et al., 2016; Wentzel et al., 2010) and achieve better academic performance (Hughes, 2011; Longobardi et al., 2016; Pasta et al., 2013). For example, Wentzel et al. (2010) investigated young adolescents’ perceptions of teacher support and its relationship to academic and social motivation. Students from the sixth (n = 120), seventh (n = 115), and eighth grades (n = 123) responded to four dimensions of support: behavioral and academic expectations, provisions of help, safety, and emotional nurturing. The results suggest that each type of teacher support predicts students’ classroom interests and prosocial behaviors. Wentzel et al. explained that teachers who interact with students in supportive ways tend to provide equally interesting instructional contexts and actively promote students’ positive social behaviors. Another study examined associations between the quality of the teacher–student relationship and children’s academic achievement in the third grade, using longitudinal data from the National Institute of Child Health and Human Development’s study of early care and education (O’Connor & McCartney, 2007). The children included in this study were mainly from European American families and their mothers were more likely to have a higher level of education. The study found a positive association between teacher–student relationships and students’ academic achievement and also discovered that a

high quality of the teacher–student relationship had a protective effect on students’ achievement for those with insecure maternal attachment.

Similarly, Baker (2006) investigated the contributions of teacher–child relationships to school adjustment among 1,310 elementary school-aged students and the extent to which child characteristics moderated this relationship. The students were recruited from four elementary schools in a small city in the Southeastern United States. Among these students, 57% are African American and 29% are Caucasian. The main findings indicated a consistent benefit of positive teacher–child relationships for school success from kindergarten to fifth grade. More specifically, children with developmental vulnerabilities were seen to benefit significantly from close teacher relationships in their school outcomes. Longobardi et al. (2016) also indicated that increased closeness to teachers was significantly associated with students’ increased academic achievement during their transition from middle to high school in Italy. In turn, students who perceived significant conflict with their teachers displayed more conduct problems and hyperactive behaviors. Based on these findings, the high quality of the teacher–child relationship shows a stable impact on children’s school outcomes over time.

The positive influence of teacher support on student achievement has been demonstrated in Chinese students (Jia et al., 2009; Li & Qiu, 2018; Teng, 2019; Wang et al., 2018; Yang, 2006). For example, Jia et al. (2009) compared middle school students’ perceptions of school climates, such as teacher support, peer support, and autonomy in the classroom, in urban cities in China and the United States. Jia et al. (2009) examined how their perceptions of school climate influence socioemotional and academic adjustment. The results revealed that Chinese students’ perceptions had higher levels of impact on school climate in all three dimensions than did students in the United States. Furthermore, both Chinese and American students reported better

grades and higher self-esteem when they felt positive support from their teachers and peers. Similarly, Wang et al. (2018) used longitudinal data to explore the relationship between school climate and student outcomes among 1,150 Chinese students studying between the third and sixth grades in five elementary schools at two different periods. The results found a positive teacher–student relationship and communicated expectations positively predicted students’ academic grades in Chinese, math, and English. In addition, Teng (2019) used data from the Programme for International Student Assessment (PISA) 2012 to examine the relationship between school climate and students’ mathematics achievement in Shanghai, China. The results showed that a positive teacher–student relationship and teacher morale were protective factors in reducing the negative effect of a disadvantaged family SES on students’ mathematics performance. However, most of these Chinese studies (Jia et al., 2009; Teng, 2019; Wang et al., 2018) targeted only the school climate in urban and not-rural areas.

To my knowledge, very few studies in China have examined the influence of school climate, such as teacher–student relationships, using a diverse nationwide sample. Also, the existing studies have focused on teacher–student relationship as a moderator to examine its influence on student’s academic achievement (e.g., Wang et al., 2013; Zhou et al., 2020). Some recent studies have treated teacher–student relationship as a mediator to explore its impact on student’s academic outcomes in different SES families in China (Li & Qiu, 2018; Xuan et al., 2019). Li and Qiu (2018) analyzed data from the China Family Panel Study in 2010 (CFPS, 2010) using a national sample ($n = 2,750$) to explore how family background influenced children’s academic performance through individual, family, and school factors. The authors found that the higher the family SES, the lower the enthusiasm for learning students have. However, the findings revealed that students’ satisfaction with class teachers not only affected

students' academic achievement but also influenced their learning behaviors through elements such as self-regulated learning. This implies that a positive teacher–student relationship may buffer the negative effect of family SES on children's performance. Another study conducted by Xuan et al. (2019) used the data from National Children's Study of China (NCSC) to explore the underlying mechanism in the relationship between school SES and academic outcomes through the mediating role of teacher–student relationship in China. School SES was examined using the average of students' family SES, including indexes of family income and parents' highest education level. A total of 10,784 participants from grades 7-9 in 199 schools were selected. The results indicated that school SES could influence children's academic achievement via children's perception of relationships with teachers.

Educational inequality has been a policy issue in China for many years because of income inequality in urban and rural areas (Gui et al., 2012; Jia & Tian, 2010; Xie & Pan, 2007). Students in low-SES families, especially in rural areas, are more likely to experience poor school environments and limited educational resources. The economic hardships they experience may also lower their expectations of academic success, leading to a lack of motivation and academic engagement in school. However, a positive teacher–student relationship may make students feel loved and supported, which in turn motivates them to study and achieve academic success (Teng, 2019). Unlike students in Western countries, Chinese students show more respect and obedience to their teachers due to the cultural value of filial piety.

Filial piety is considered as an important value within Chinese family system (Ho, 1986). Along with family hierarchy, filial piety emphasizes clear lines of authority, respect for the family member, and obedience to the elder in a family. Therefore, Chinese children are expected to be respectful to the elder generation, bring honor to the familial names, to be devoted and

responsible to their parents, and to be altruistic to social behaviors (Fong & Wu, 1996). In family relationships, parental authority and children's obedience are highly valued. Most of time, children should comply with parents' demands and expectations without choices, even as they grow up. Scholars also argued that filial piety may affect the individual's interpersonal interactions with people outside the family (Yeh & Bedford, 2003). An old Chinese saying, "teachers and students are like fathers and sons", suggests that filial piety as an ethical norm guiding the parent-child relationship may also affect the teacher-student relationship (Li, 1998). When students transfer the filial piety norms into teacher-student interactions, they may develop an intimate relationship with their teachers (Tsao & Yeh, 2019). Also, they are likely to learn seriously and boldly ask questions and advice from teachers, ultimately contributing to their own academic performance (Bosman et al., 2018). For rural students, teachers are not only people who teach and solve problems, but also a source of accompaniments and social support in their lives (Cao, 2001). Thus, the role of a teacher in a child's educational process is considered important, more so than the role parents play in Chinese culture, especially in the case of low-SES families and rural families. Therefore, this dissertation focused on teacher-student relationship as a mediator to explore its impact on student's academic outcomes in different SES families in China.

Academic Self-Regulation

Self-regulation is a complex construct that plays an important role in children's cognitive, academic, and socioemotional development (e.g., McClelland & Tominey, 2011; Montroy et al., 2016; Pintrich & Zusho, 2002; Zimmerman, 2002). For instance, researchers in the Western societies have found that children with strong self-regulatory skills are more likely to be socially competent (Eisenberg et al., 2016). In contrast, children with poor self-regulated skills tend to

experience academic difficulties and peer rejection (McClelland & Tominey, 2011). Studies have also demonstrated that optimally self-regulated children seem well prepared for school, as children must experience a critical developmental period when they start to engage in a more structured and academic learning environment (Cardima et al., 2015; Montroy et al., 2016). Self-regulation has been demonstrated to be associated with literacy, reading, and mathematical skills across cultural contexts (e.g., Bohlmann & Downer, 2016; Lin et al., 2016). Pintrich (2000) revealed that students who display strong self-regulatory capabilities show better academic performance in the classroom when facing distractions and task difficulties. Overall, self-determined learning or self-regulated learning has been demonstrated as a good indicator for predicting student academic success. This highlights that learners can be autonomously motivated to be involved in school activities, have better problem-solving and coping skills, and put in more effort when they face setbacks (Grolnick & Slowiaczek, 1999; Ryan & Deci, 2000; Wang & Pomerant, 2009; Wang & Cai, 2017). Furthermore, developing self-regulation skills is essential during early adolescence because this is the period when children start to become independent and demand greater autonomy (Hill & Tyson, 2009). Nurturing academic self-regulation in an autonomous, supportive, and secure environment is not only the parents' but also the school's job (Wang & Cai, 2017). When adolescents develop their academic self-regulation, it means that they realize their ability to be successful and their willingness to do well in school.

Self-Regulation and Parental Involvement

Recent studies on the association between parental involvement and child academic outcomes emphasized that parental involvement may have a more significant impact on proximal learning outcomes through factors such as motivation, self-regulation, and academic self-efficacy than on direct measures of academic achievement such as grades (e.g., Daniel et al., 2016;

Hoover-Dempsey et al., 2001; Hoover-Dempsey & Sandler, 2005; Wang & Cai, 2017). For instance, some studies have revealed that parental involvement may indirectly influence students' academic achievement through self-regulation (e.g., Daniel et al., 2016; Wong, 2008; Xu et al., 2010). Wong (2008) examined adolescent perceptions of parental involvement and autonomy support and their relationship with self-regulation, academic performance, and substance use among 171 students in the United States. The results found that student self-regulation significantly mediated the influence of parental involvement and autonomy support on academic achievement and classroom disruptive behaviors. In another study, Xu et al. (2010) investigated the associations between school-based parental involvement, self-regulation, and reading achievement among fifth graders, using data from an ECLS-K study. The findings suggest that self-regulation mediates the association between school-based involvement and children's reading outcomes. Similarly, Daniel et al. (2016) used a longitudinal study of Australian children ($n = 2,616$) to evaluate associations between early school-based parental involvement, children's self-regulation, and academic achievement. Structural equation modeling analyses revealed that children's self-regulation fully mediated the relationship between school-based parental involvement in grade 1 and children's reading outcomes in grade 3. Children's self-regulation also mediated the association between school-based involvement and numeracy achievement. This association was stronger for children from middle- and high-SES families than for those from low-SES families. Although studies have raised the interesting mediating role of self-regulation on the relationship between parental involvement and academic outcomes, the present findings mainly come from school-based parental involvement in Western studies. Xu et al. (2010) suggested that further research was needed to address the effects of

different forms of parental involvement on self-regulation and academic achievement from a cultural perspective to provide a full understanding of these associations.

However, only a few studies have investigated how different types of parental involvement are associated with academic self-regulation and affect student academic success in the Chinese context. Wang and Cai (2017) collected data from eighth-graders in urban China ($n = 1,009$) to evaluate the associations between parental involvement, adolescent academic self-regulation, and academic achievement. Four dimensions of parental involvement were identified in the study: parental academic assistance through homework checks and discussing school progress; parental provision of structure through measures such as setting time limits for watching TV and playing games, and making rules to ensure they completed their homework on time; the provision of cultural goods such as counting the number of storybooks, world maps, music instruments, newspapers, and encyclopedias at home; and parental leisure involvement in activities such as playing games, watching movies together, and talking about each other's daily lives. Findings from using structural equation modeling revealed that parental leisure involvement was positively associated with adolescent self-regulation, and adolescent self-regulation was also associated with students' grades in Chinese, math, and English. The authors explained that parental leisure involvement might capture adolescents' needs for developing relatedness and autonomy, which promotes their self-regulated learning behaviors. However, parental academic assistance, provision of structure, and provision of cultural goods showed no significant associations with students' self-regulation and academic achievement. Parental academic assistance and the provision of the structure were found to be negatively associated with students' academic grades, although such correlations were not significant. Consistent with findings in other Asian studies (Chen & Ho, 2012; Kim, 2020), Kim (2020) explained that the

negative association between parental academic assistance, such as homework checks and students' academic achievement, may be because Asian parents are more likely to actively assist their children when they are struggling in school. Meanwhile, such academic-oriented interactions involve pressure and other negative methods that may reduce children's autonomy. However, Asian culture, which emphasizes filial piety and interdependence between family members, may help reduce the negative effects of strict parental involvement, such as through the parental provision of structure or direct academic assistance, on children's learning behaviors and outcomes. As discussed above, parental leisure involvement, which is identified as non-academic parental involvement, provides autonomy and emotional support for adolescents and fosters self-regulated learning.

Self-Regulation and Teacher–Student Relationship

Some empirical studies have found that teacher–student relationships may influence academic achievement indirectly through children's attitudes and behaviors (e.g., Baker, 2006; Conner & McCartney, 2007; Hamre & Pianta, 2001; Pianta, 1999). Students who perceive a positive relationship with teachers are more likely to display positive school attitudes, such as motivation, academic expectations, satisfaction with school, and academic self-efficacy (e.g., Baker, 2006; Roeser et al., 1996). Furthermore, studies have indicated that the quality of the teacher–student relationship is strongly associated with the development of students' self-regulated learning and academic skills, such as reading and math skills (e.g., Berry, 2012; Cadima et al., 2015; Zee & Bree, 2017). Drawing from the extended attachment perspective, these studies, mainly conducted in the Western societies, explained that high-quality teacher–student relationships involve a high level of warmth and emotional support, which in turn could provide students with increased emotional security. This, in turn, could promote students'

engagement in learning activities, as well as their self-regulatory competency in the school environment (e.g., Baker, 2006; Cadima et al., 2015; Pianta, 1999).

Consistent with findings in Western studies, Chinese scholars have also stated that the teacher–student relationship can influence student academic achievement through the mediating mechanism of self-regulation (Li & Qiu, 2018; Teng, 2019). As discussed in the previous section, Li and Qiu (2018) used a national sample to explore how family background influences children’s academic performance through individual, family, and school factors. The findings revealed that students’ satisfaction with class teachers not only affected their academic achievement but also significantly influenced their self-regulated learning. Unlike American schools, students in Chinese elementary and middle schools usually stay with the same classmates and teachers until they graduate. Additionally, in China, teachers are viewed as authority figures in the school environment and are well respected by both students and parents (Le et al., 1998). When students feel supported and cared for by their teachers, they believe the teachers value their effort, which promotes their motivation to be a “good student” and is associated with more self-regulated behaviors.

To sum up, studies have suggested that self-regulation is viewed as a mediator in the relationship between parental involvement and academic achievement. That said, how different types of parental involvement, such as home involvement and emotional support, are associated with academic self-regulation and their impact on students’ academic success in the Chinese context is not clear. Furthermore, studies regarding the link between teacher–student relationships, self-regulation, and academic achievement have primarily been conducted in the North America and Europe. More empirical studies on these relationships that use nationally representative samples are needed in the context of China.

Gender Differences

Although family SES has been well documented to be associated with children's academic outcomes, some researchers stated that this association's magnitude might differ between boys and girls (Autor et al., 2015; Dubow et al., 2009). For example, boys in socioeconomically disadvantaged families achieved lower academic scores and had lower high-school completion rates than their sisters (Autor et al., 2015). The authors explained that parental investment might differ by the gender of children resulting from the family disadvantage. For example, parents in low-SES families tend to spend more time interacting with and monitoring girls than their boys (Baker & Milligan, 2016). Similarly, Carter and Wojtkiewicz (2000) found that parents helped their adolescent daughters more than their sons by limiting the amount of time spent socializing with friends. However, parents tended to check their sons' homework more than their daughters'.

In addition, according to Bronfenbrenner and Morris (2006), children's gender could differentiate parents' and teachers' expectations and perceptions of their developmental processes and experiences. Parents expect school-aged boys to find math and science easier and more enjoyable than girls, despite some study finding no significant differences in their academic performance, probably because of the small sample size and the measurement of academic performance (Tenenbaum & Leaper, 2003). Scholars have also observed that throughout their school careers, teachers were more likely to interact with and be attentive to boys than to girls (Ruble et al., 2006). Studies have found that teachers' gender-differentiated responses are most likely to occur in elementary school (Taylor & Gebre, 2016). In elementary school, teachers tend to call on boys more than girls when asking them questions in class.

In the Chinese context, due to the one-child policy and the traditional belief “Yang Er Fang Lao,” which means having a son (rather than a daughter) to take care of the parents in their old age, son preference still exists in Chinese society, especially in rural areas. Therefore, parents tend to provide differential educational opportunities for boys and girls, which occurs more in rural areas (Wang, 2005). For example, boys are more likely to attend school and receive longer years of education than girls. Parents believe that boys should receive a better education and get better jobs because they need to provide financial support to the family in the future, including supporting parents in old age (Wang, 2005). However, few studies have examined whether the association between family SES and children’s academic outcomes differs by gender in the Chinese context. Also, it is unclear whether and how the association between family SES and children’s educational outcomes through family expectations, parental involvement, and teacher–student relationship differs by gender.

Urban/Rural Differences

Educational inequality has been a policy issue in China for many years because of income inequality in urban and rural areas (Gui et al., 2012; Jia & Tian, 2010; Xie & Pan, 2007). Urban residents can receive more benefits, including better health insurance, higher quality education, and more recreational activities from the central government than rural residents (Lin et al., 1996). Urban families are more likely to purchase education services than rural families; therefore, urban children were found to show better academic performance than rural children (Li & Qiu, 2018). On the one hand, studies found that parents in urban areas show more emotional support and understanding of their children than rural parents (Deng et al., 2006; Yang et al., 2005). On the other hand, teachers with higher education degrees are more likely to stay in urban areas than rural ones, resulting in children of urban regions receiving a relatively good

quality education and achieving better academic achievements (Yang et al., 2014). The unbalanced development and inadequate distribution of educational resources between urban and rural areas not only profoundly impact children's academic progress but also influence how the family and school engage in the children's academic socialization (Yang et al., 2014).

Despite the unequal distribution of educational resources, children in rural areas of China are very likely to study hard and try to change their social class and improve their livelihood. Rural migrant children, mostly from low-SES families in China, believe that studying hard and being admitted to the university is the main avenue to change their fate and have a better life (Chen, 2022). Compared with urban children, rural children's academic achievement is more dependent on their own learning behaviors (Li & Qiu, 2018). In addition, rural adolescents indicated a greater willingness to obey their parents, higher levels of cohesion with parents, and less intensity of conflict with their parents than urban adolescents (Zhang & Fuligni, 2006). Although existing studies have shown that there are differences between urban and rural areas in children's academics, family investment, and teacher–student relationship, few studies examine an urban-rural comparison to look at how family SES influences children's academic achievement through family, school, and individual factors.

Chapter 3: Theoretical Framework

This chapter focuses on the conceptual models and theories that provide support for the underlying mechanisms linking family SES, family expectations, and children's academic socialization that have relevance for the Chinese context. Four theoretical frameworks, namely the bioecological framework (Bronfenbrenner, 1979, 1986, 1989; Bronfenbrenner & Morris, 2006), academic socialization model (Taylor et al., 2004), family stress theory (Conger et al., 2010), and social cognitive theory (Bandura, 1986, 1991; Zimmerman & Schunk, 2001), were used to provide theoretical support for the proposed conceptual model employed in this study. Below is a brief discussion of the different theoretical perspectives and their application in the proposed conceptual model.

Bronfenbrenner's Bioecological Framework

Bronfenbrenner's (1979, 1986, 1989) bioecological framework of child development has had a profound impact on research and education worldwide (Taylor & Gebe, 2016). The framework highlights the interactions among person, process, context, and time (Bronfenbrenner & Morris, 2006). The person component describes the role that children's characteristics, such as age, gender, and intelligence, play in their individual development. The microsystem is the innermost layer with which children have the most interaction and includes parents, teachers, and peers (Bronfenbrenner & Morris, 2006). The mesosystem is the second immediate layer that includes the connections between microsystems, such as parent-child and teacher-child interactions. The exosystem is the third layer, which includes components such as parents' work schedules that indirectly impact child development through mesosystem constructs. The macrosystem, the outermost context, includes cultural characteristics, economic disruption, and political upheaval, and impacts other contexts surrounding the child (Taylor et al., 2004;

Yamamoto et al., 2016). The time component addresses the impact of time and developmental changes on children's daily lives. Bronfenbrenner's bioecological framework highlights the fact that children do not develop in isolation. Instead, children's development occurs in a nested systemic context (Marchant et al., 2001).

The role of the microsystem has been widely studied to examine the relationship between the immediate environment, including the family and school, and children's academic achievement across cultural communities (Marchant et al., 2001). Although past studies suggested scholars should examine the influence of the combination of contextual factors on children's academic achievement (Bronfenbrenner & Crouter, 1983; Epstein, 1983; Lee & Shute, 2010; Marchant et al., 2001; Steinberg, 2000), few studies have utilized this framework to study the predictors of academic achievement in the Chinese context (Li & Qiu, 2018). Li and Qiu used a national sample in CFPS 2010 to explore how family background factors (e.g., parental education and family income) influence children's academic achievement in the elementary and middle school in China. The study addressed the family environment and revealed its significant impact on parenting behaviors, teacher–student relationship, and child performance.

Academic Socialization Model

Although parents have been recognized as one of the most important influences on children's academic achievement, what is not clear is the specific ways in which parents socialize their children regarding school-related behaviors and academic outcomes (Taylor et al., 2004). Based on the bioecological framework and contextual systems model, Taylor et al. (2004) proposed a conceptual model of academic socialization (see Figure 1) to describe parental influences on children's educational outcomes and school adjustment. This model combines two perspectives, “who parents are” and “what parents do,” to fully understand the multiple effects of

shaping a child's academic development. The "who parents are" perspective emphasizes the socioeconomic and cultural characteristics of parents and their associations with children's academic outcomes, while the "what parents do" perspective focuses on parenting behaviors and parent-child relationships in children's academic socialization. Further, the model highlights that children's academic socialization takes place under the broader umbrella of socioeconomic and cultural contexts. Based on the "who parents are" perspective, studies have found differences in parental involvement between higher- and lower-SES families. Children living in families with constrained economic resources and parents who have limited education experience lower parental involvement than children in higher-SES families (Li & Qiu, 2018; Yamamoto & Sonnenschein, 2016).

Figure 1

Academic socialization model. From "Academic socialization: Understanding parental influences on children's school-related development in the early years". By Taylor, L. C., Clayton, J. D., & Rowley, S. J., 2004. Review of General Psychology, 8(3), 163–178. Copyright 2004 by the Educational Publishing Foundation

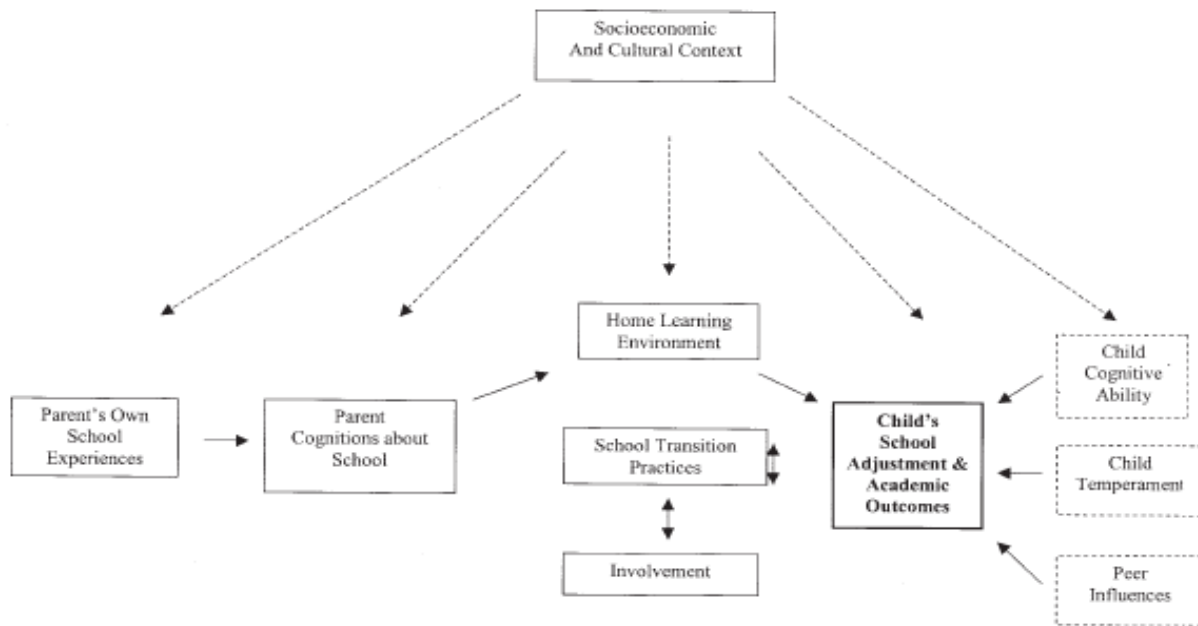


Figure 1. Conceptual model of academic socialization. Dashed boxes indicate nonparental factors in academic socialization.

Family SES and cultural beliefs and practices shape parents’ values regarding children’s future achievement, which in turn foster children’s beliefs and values regarding academic success (Yamanoto & Sonnenschein, 2016). In Chinese culture, family expectations on the importance of educational success and future achievement influence parents’ practices regarding education and affect children’s learning behaviors and academic outcomes (Wang & Oimerantz, 2009; Wang et al., 2019).

The “what parents do” perspective highlights the link between the learning environment at home, parental involvement, and children’s academic outcomes. As discussed in the previous section, different aspects of parental involvement have been examined in past studies, such as school and home involvement and academic socialization. Chinese parents are less likely to be involved in school activities, and this dimension of parental involvement is not predictive of student achievement (Fan & Chen, 2001; Kim, 2020). Home involvement, such as direct help

with homework, is negatively associated with students' academic performance (Kim, 2020). Academic socialization, which involves communicating about school and discussing educational beliefs and expectations, is associated with academic achievement in Chinese and other Asian families (Kim, 2020). The strength of this relationship is stronger for children in elementary school than for those in middle school (Jeynes, 2007; Wilder, 2014). Given the characteristics of Chinese parental involvement, the two aspects of nurturant-involved parenting—instrumental and emotional support—will be used in the proposed conceptual model.

Although Taylor et al.'s (2004) academic socialization model stressed the importance of parental factors on children's academic outcomes, it is important to consider the teacher–student relationship's mediating role in children's academic socialization. The teacher–student relationship strongly predicts children's school success even after controlling for other child and family factors (Conner & McCartney, 2007). Students who perceive positive relationships with their teachers show increased motivation and willingness to learn (Baumeister & Leary, 1995; Prino et al., 2016; Wentzel et al., 2010) and have better academic outcomes (Hughes, 2011; Longobardi et al., 2016; Pasta et al., 2013).

Family Stress Theory

Family stress theory posits that stress associated with the family's poor economic conditions is associated with conflictual and disorganized family functioning and poor child outcomes (Conger et al., 2010; Yamamoto et al., 2016). Parents in stressful environments show reduced motivation and capacity to support their children's education (Conger et al., 2010; Linver et al., 2002; Zhang, 2012). Objective indicators of economic hardship, such as low wages, unemployment, and poor asset-to-debt ratio, are associated with financial stress, conflictual relations, harsh parenting, and stressful family processes across cultures (Chan & Yeung, 2011;

Linver et al., 2002; Yamamoto et al., 2016). Low-SES parents with limited economic resources often struggle to provide primary care to their children and devalue their role in facilitating their children's academic development (Yamamoto et al., 2016). Additionally, many low-SES parents believe that schools play a more critical role in cultivating children's educational development than parents do (Lareau, 2003; Yamamoto, 2015). By comparison, parents in middle- or high-SES families are more likely to discuss school-related issues and concerns with their children, engage in school activities, and provide homework support, consequently facilitating their children's academic performance (Li, 2006; Liu, 2008).

Social Cognitive Theory of Self-Regulation

Starting in the mid-1980s, educational psychology researchers have developed various self-regulation theories (e.g., Bandura, 1986; Pintrich, 2000; Schunk & Zimmerman, 1998; Winne & Hadwin, 2010; Zimmerman, 1990, 2002). One such theory is the social cognitive theory (Bandura, 1986, 1991), which draws information from social learning (Bandura, 1977) and social-cultural (Vygotsky, 1978) perspectives. According to social cognitive theory, self-regulation is conceptualized as a self-directive process by which individuals control their feelings, thoughts, and actions to achieve goals (Zimmerman & Schunk, 2001). Unlike other general abilities, self-regulation consists of utilizing personal skills and attributes to achieve learning goals. On the one hand, studies have found that self-regulation makes a distinctive contribution to students' academic performance (e.g., Bohlmann & Downer, 2016; Lin et al., 2016). On the other hand, social cognitive theory highlights the role of social factors, including parents' and teachers' positions, in cultivating children's self-regulation (Martinez-Pons, 2002). Researchers have indicated that factors such as the role of parents and teachers may have a more

significant correlation with students' self-regulation than their academic achievements (e.g., Fan & Chen, 2001; Hoover-Dempsey & Sandler, 2005). Pintrich (2000) stated the following:

It is not just individuals' cultural, demographic, or personality characteristics that influence achievement and learning directly, or just the contextual characteristics of the classroom environment that shape achievement, but the individuals' self-regulation of their cognition, motivation, and behavior that mediate the relationships between the person, context, and eventual achievement. (p. 453)

Thus, parents and teachers may not only directly impact children's academic achievement but also indirectly affect academic achievement through their influence on children's self-regulation.

As discussed in the previous chapter, empirical studies have supported the hypothesis that self-regulation mediates the influence of parents and teachers on academic achievement (e.g., Baker, 2006; Hoover-Dempsey & Sandler, 2005; Li & Qiu, 2018; Wang & Cai, 2017). Proximal learning outcomes, such as self-regulation and academic self-efficacy, may be more significantly impacted by parental involvement than direct measures of academic achievement, such as grades (e.g., Daniel et al., 2016; Hoover-Dempsey et al., 2001; Hoover-Dempsey & Sandler, 2005; Wang & Cai, 2017). Students who perceive positive relationships with their teachers are more likely to display higher self-regulation (e.g., Baker, 2006; Roeser et al., 1996) and higher academic achievement (e.g., Berry, 2012; Zee & Bree, 2017).

Research Questions and Hypotheses

This investigation examined how family SES is related to children's academic achievement through the associations with family expectations on children's future achievement, nurturant-involved parenting, teacher–student relationship, and academic self-regulation in the Chinese context (Figure 1). This study draws on tenets within the bioecological framework

(Bronfenbrenner, 1979, 1986, 1989; Bronfenbrenner & Morris, 2006), academic socialization model (Taylor et al., 2004), family stress theory (Conger et al., 2010), and social cognitive theory (Bandura, 1986, 1991; Zimmerman & Schunk, 2001).

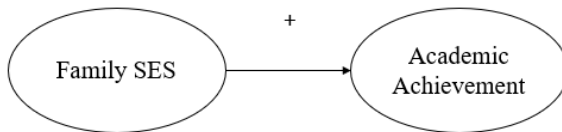
The following research questions and hypotheses were examined in this study.

Research Question 1

What is the direct association between family SES and children’s academic achievement?

Figure 2a

Family SES and children’s academic achievement



Hypothesis 1

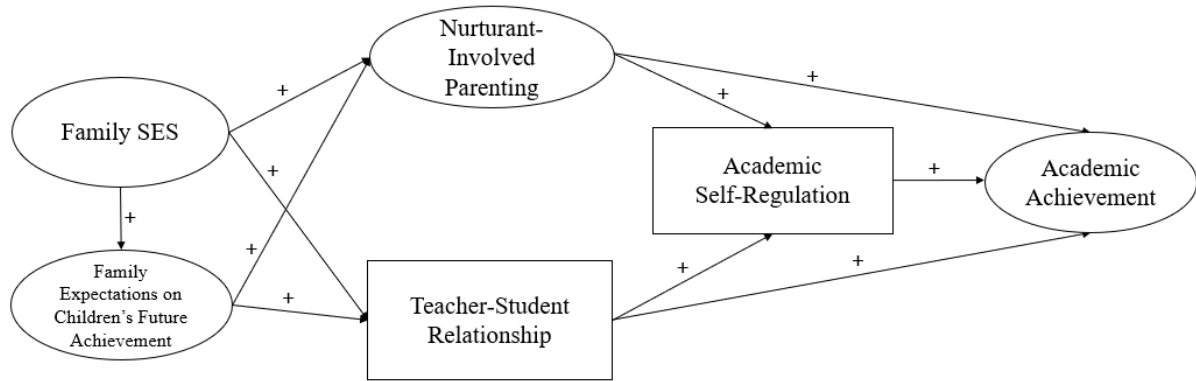
Several studies have found that family SES is strongly associated with students’ academic attainment (e.g., Coleman & Hopkins, 1966; Sirin, 2005; Zha & Hall, 2019). In line with Bronfenbrenner’s bioecological framework and Taylor et al.’s (2004) academic socialization model, it is hypothesized that family SES will be positively associated with children’s academic achievement. The nature of the association between family SES and academic achievement is indicated in Figure 2a.

Research Question 2

What are the mediators of the association between family SES and children’s academic achievement?

Figure 2b

Family SES and children’s academic achievement through family expectations on children’s future achievement, nurturant-involved parenting, teacher–student relationship, and academic self-regulation



Hypothesis 2

Family SES and cultural beliefs shape parents’ values and behaviors regarding children’s future achievement, which in turn foster children’s beliefs and behaviors regarding academic success (Yamanoto & Sonnenschein, 2016). Several studies have indicated that the association between economic hardship and pressure, and academic achievement was mediated through family dynamics and parental involvement in cross-sectional and longitudinal studies (e.g., Belsky et al., 2006; Hunt et al., 2015; Neppl et al., 2015), and that parental involvement in school functions and a supportive school atmosphere strongly and positively predicted students’ academic achievement (Marchant et al., 2001). Moreover, self-regulation mediates the influence of parents and teachers on academic achievement (e.g., Baker, 2006; Hoover-Dempsey & Sandler, 2005; Li & Qiu, 2018; Wang & Cai, 2017).

Thus, in line with Bronfenbrenner’s bioecological framework and the work of Marchant et al. (2001) and others (e.g., Baker, 2006; Hunt et al., 2015; Wang & Cai, 2017), it is

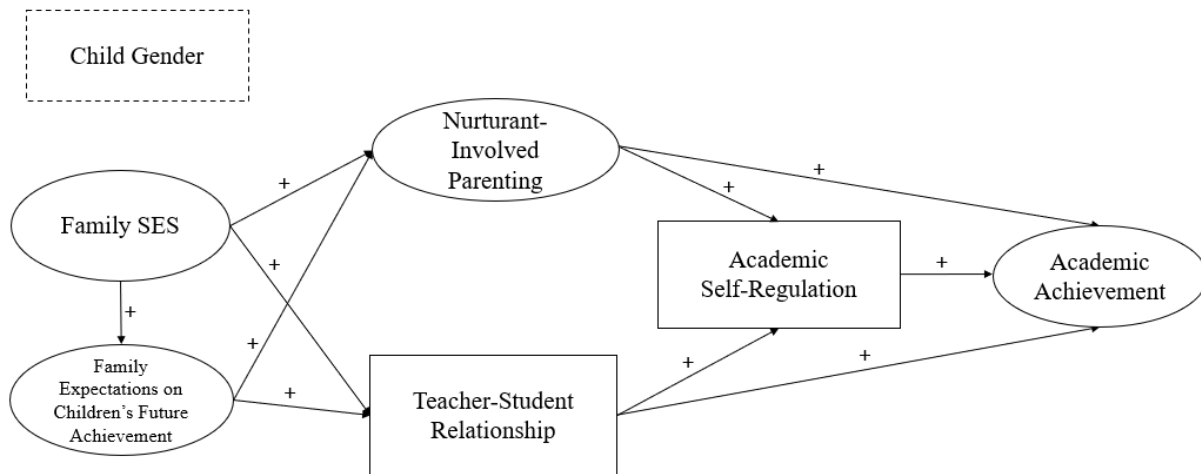
hypothesized that cultural beliefs, that is, the family expectations on children’s future achievement; family factors, that is, the two aspects of nurturant-involved parenting, namely instrumental and emotional support; school factors, that is, the teacher–student relationship; and academic self-regulation will function as mediators of the association between family SES and children’s academic achievement. The nature of the associations between the constructs is indicated in Figure 2b.

Research Question 3

Does the gender of the child, that is, gender preference, cause variance in the associations among family SES, family expectations on children’s future achievement, and children’s academic achievement through their perceived nurturant-involved parenting, teacher–student relationship, and academic self-regulation?

Figure 2c

Moderating role of child gender in the test of the overall model



Hypothesis 3

According to Bronfenbrenner and Morris (2006), children’s gender could differentiate parents’ and teachers’ expectations and perceptions of their developmental processes and

experiences. Parents expect school-aged boys to find math and science easier and more enjoyable than girls, despite some study found no significant differences in their academic performance, probably because of small sample size and the measurement of academic performance (Tenenbaum & Leaper, 2003). Scholars have also observed that levels of parental involvement could differ based on children's gender (e.g., Carter & Wojtkiewicz, 2000; Tenenbaum & Leaper, 2013). Carter and Wojtkiewicz (2000) found that parents helped their adolescent daughters more than their sons by limiting the amount of time spent socializing with friends. However, parents tended to check their sons' more than their daughters' homework. It was found that throughout their school careers, teachers were more likely to interact with and be attentive to boys than to girls (Ruble et al., 2006). Studies have found that teachers' gender-differentiated responses are most likely to take place in elementary school (Taylor & Gebre, 2016). In elementary school, teachers tend to call on boys more than girls when asking them questions in class.

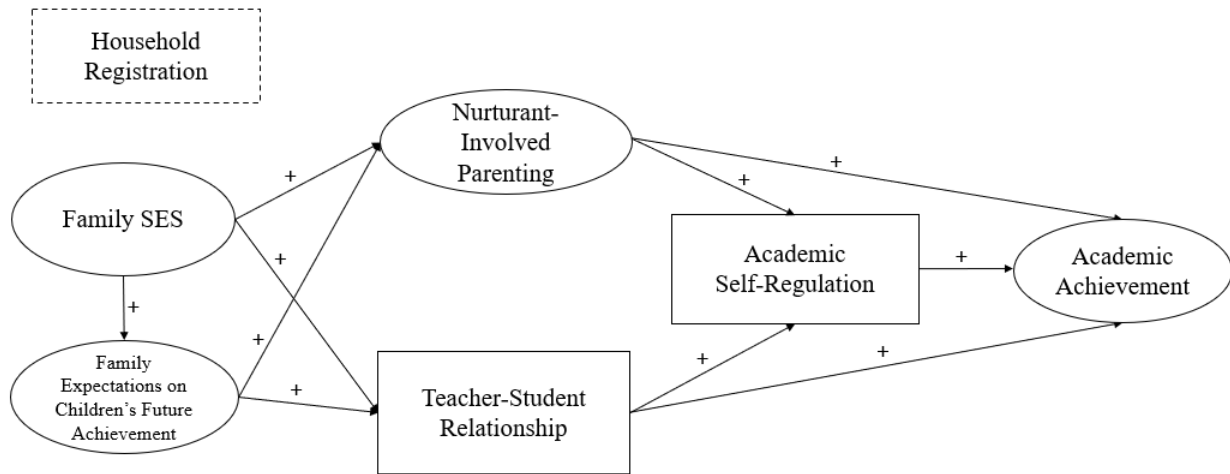
Therefore, it is hypothesized that the association between family SES and children's academic achievement through various constructs will differ for boys and girls. Because there are limited studies on how these pathways vary across boys and girls in the Chinese context, this study did not hypothesize the directionality of the effect. The nature of the associations between the constructs is indicated in Figure 2c.

Research Question 4

Do the household registration, that is, urban or rural status of the child, cause variance in the associations among family SES, family expectations on children's future achievement, and children's academic achievement through their perceived nurturant-involved parenting, teacher-student relationship, and academic self-regulation?

Figure 2d

Moderating role of household registration in the test of the overall model



Hypothesis 4

The *hukou* system, which is the official household registration system in China, has been considered a crucial contextual factor affecting the development of multiple generations (Wu, 2013; Pan, 2018). The *hukou* system is a residential classification system that categorizes individual residents as either “non-agricultural residents,” that is, urban *hukou*, or “agricultural residents,” that is, rural *hukou*. Generally, the household’s *hukou* status is inherited by the next generations, no matter where they are born. Today, an individual’s rural *hukou* status can be changed by migrating to large cities with greater education or employment facilities. For instance, this can occur when an employer is qualified to sponsor the urban status of a rural *hukou* holder. Such a residential classification system indeed creates challenges, especially for school-aged children’s development in rural areas (Wu, 2013). Urban residents can receive more benefits, including better health insurance, higher quality education, and more recreational activities from the central government than rural residents (Lin et al., 1996). The unbalanced

development and inadequate distribution of educational resources between urban and rural areas may profoundly impact children's academic progress (Yang et al., 2014).

Thus, it is hypothesized that the association between family SES and children's academic achievement through various constructs will differ for rural and urban families. Because there are limited studies on how these pathways vary across rural and urban families in the Chinese context, this study did not hypothesize the directionality of the effect. The nature of the associations between the constructs is indicated in Figure 2d.

Chapter 4: Methods

Data Overview

Data for this dissertation were drawn from the CFPS. CFPS is a nationally representative longitudinal survey of Chinese society that was launched in 2010 by the Institute of Social Science Survey (ISSS) of Peking University. Participants were followed up every two years—2012, 2014, and 2016. The survey was designed by an interdisciplinary group of scholars to collect individual-, family-, and community-level longitudinal information on a range of sociological and cultural issues (e.g., education, values, economy, demography, migration, and health). A multistage stratified sampling strategy was adopted to track 14,960 households from 635 communities in 162 counties in 25 provinces, municipalities, and autonomous regions, excluding Taiwan, Hong Kong, Macao, Xinjiang, Tibet, Qinghai, Inner Mongolia, Ningxia, and Hainan (Xie, 2012). The CFPS data are broadly representative of the mainland Chinese population (Xie & Hu, 2014).

The baseline survey was released in 2010, and follow-up surveys were completed in 2012, 2014, 2016, and 2018. In the 2010 baseline survey, 33,600 adults and 8,990 children from 14,960 families were successfully interviewed, resulting in a response rate of 81%. The majority of nonresponses were due to noncontact with respondents and some interview questions that were not asked of certain participants (Xie, 2012). In the 2012 sample, 35,720 adults and 8,624 children from 13,315 families were successfully re-interviewed, with a response rate of 82%. In the 2014 sample, 37,147 adults and 8,616 children (including 34,715 adults and 7,095 children from the 2010 and 2012 surveys) were interviewed, resulting in data collected from 13,946 families. The 2016 sample families in the previous three waves and additional families were interviewed, resulting in a sample of 36,892 adults and 8,427 children from 14,019 families. The

2018 sample was not available at the time this dissertation was being written (data have not been completely cleaned and fully released by the ISSS of Perking University). At each wave, interviews included five core questionnaires: the child questionnaire, the adult questionnaire, the family questionnaire, the family roster questionnaire, and the community questionnaire. The child and adult questionnaires collected information at the individual level and were answered by adults (above 16 years) and children themselves (below 16 years), along with their primary caregivers. The family and family foster questionnaire collected information at the family level. The former was answered by a family member who is knowledgeable about family relations the best, while the latter was answered by one or several eligible family members who know the family's economic situation best. The community questionnaire collected information at the community level, which was answered by a community administrator who knows the community/neighborhoods well (Xie & Hu, 2014).

The CFPS has several advantages compared to other social survey datasets currently available in the Chinese context. First, the CFPS is the first large-scale nationally representative longitudinal study of Chinese individuals and households. Second, the CFPS is one of the few surveys that have assessed various aspects of children's cognitive, academic, health, and well-being outcomes, as well as cultural values, parenting, and family relationships. Other widely used social surveys in China, such as the Chinese Household Income Project (CHIP) and the China General Social Survey (CGSS), do not address issues of family relationships and child behaviors. Thus, the CFPS was considered the appropriate dataset to test the conceptual model in this dissertation.

For this dissertation, the 2014 wave of the CFPS was used. The variables assessed in this dissertation were selected from the family, adult, and child questionnaires. The family and adult

questionnaires included economic, educational, and occupational-related information about households and family members. The child questionnaire provided a variety of information on children's daily lives, health, education, schooling, migration, family dynamics, and well-being. Individuals aged 16 and above completed the adult questionnaire, and individuals aged 15 and younger answered the child questionnaire. The child questionnaire consists of two parts: an adult proxy report for children between 0 and 15 years and the child's self-report between 10 and 15 years. The CFPS defines an adult proxy respondent (primary caregiver [PCG]) as "the main guardians living with the children interviewed, who take the most care of them and know the best about them" (Xie, 2012, p. 33). PCG could be any family member, such as a mother, a father, or any other adult family member, in the absence of both mother and father.

Given that the child questionnaire in the 2014 wave included specific questions regarding parenting and parental involvement (constructs required for this dissertation), which were only available in the 2014 wave, the data from the 2014 wave were included in this study. In addition, the information on family SES was primarily collected from the 2014 wave, and the 2016 wave was used as an additional resource if there is a significant component of missing data on SES. The research has indicated that children in upper elementary school (ages around 10–12) differ markedly from lower elementary school in physical, cognitive, and social domains (Collins, 2005). This dissertation only looked at academic outcomes among upper elementary school children. Although the CFPS provides longitudinal data, the outcome variables were selected from the 2014 wave.

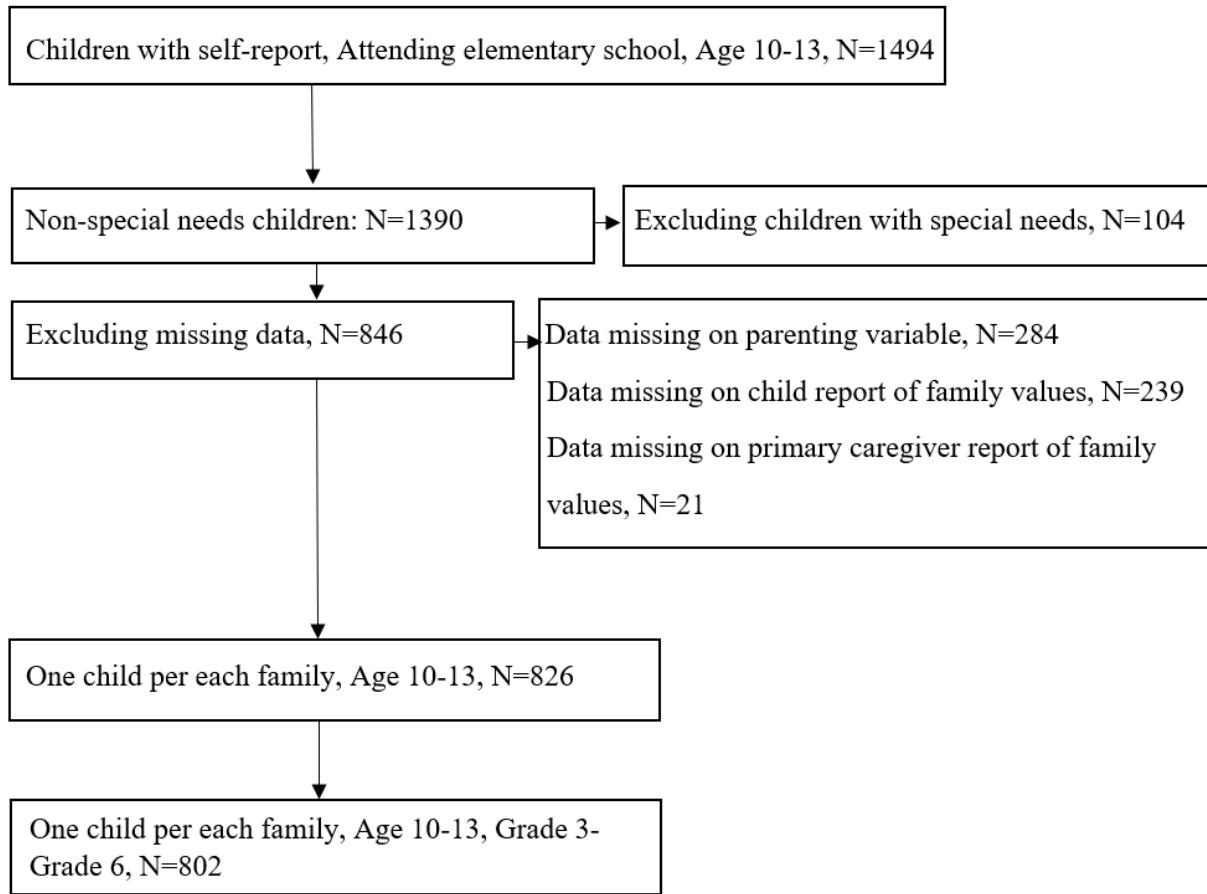
Sample

In the 2014 wave of the CFPS, data were collected from 8,616 children 15 years and younger (see Figure 3). Chinese children generally start elementary school around 6 or 7 and

complete elementary school at about 12 or 13 years old. Thus, data for this dissertation were restricted to 1,494 children between 10 and 13 years of age who completed the child questionnaire and who were currently attending elementary school. Children with special needs were not included in the analyses, resulting in a sample of 1,390 (four questions were used to examine whether the child has non-special needs and whether the child could walk, speak complete sentences, count from 1 to 10, and urinate by him/herself). Parents' responses (yes) to these four questions were used to indicate whether a child was non-disabled. For 284 individuals, data were not collected on nurturant-involved parenting; for 239 individuals, data were not collected on child reports of family expectations, and for 21 individuals' data were not collected on primary caregiver reports of family expectations, resulting in a sample of 846. For families with more than one child participating in the study, one child was randomly selected, resulting in a sample of 826 children between 10 and 13 years. This dissertation chose upper elementary children to limit the focus to third through sixth grade, resulting in a final sample of 802 children.

Figure 3

Selection of the study sample



The final sample included 802 families whose children were between 10 and 13 years old ($M = 10.61$, $SD = .67$). Forty-six percent of the sample were girls, and 58.4% came from rural areas. The majority of children who participated in this study attended grade 3 (16.6%), grade 4 (38.5%), or grade 5 (33.2%). Nearly 77% of primary caregivers were parents, and 53.2% were mothers (see Table 1).

Table 1*Sample characteristics*

	n	Percent (%)
Child Age (years)		
10 years old	391	48.8
11 years old	339	42.3
12 years old	67	8.4
13 years old	5	.6
Child Gender		
Boy	431	53.7
Girl	371	46.3
Household Registration		
Urban	334	41.6
Rural	468	58.4
Grade Level		
Grade 3	133	16.6
Grade 4	309	38.5
Grade 5	266	33.2
Grade 6	94	11.7
Primary Caregiver		
Mother	427	53.2
Father	189	23.6
Non-Parent	184	22.9
Unknown	2	.3

Measures***Family Socioeconomic Status (FSES)***

Three indicators—education level, occupational status, and net family income per capita—were used to assess FSES. The questions on FSES were derived from the family questionnaire completed by the primary caregiver most familiar with the family’s socioeconomic status. Zha and Hall (2019) used the three variables (indicated above) to assess FSES using the CFPS 2010. The same variables were used to indicate FSES using data from CFPS 2014. The primary caregiver’s education level was assessed using one question: years of formal education on a scale from 0 to 22. The longer years suggested higher attainment. In the CFPS 2014 dataset, the years of education were transformed into the education level based on eight categories (e.g.,

1 = Illiterate/Semi-literate, 2 = Primary school, 3 = Junior high school, 4 = Senior high school, 5 = 3-year college, 6 = 4-year college/ bachelor's degree, 7 = Master's degree, and 8 = Doctoral degree), representing the primary caregiver's highest education level.

Occupational status was assessed using the *International Socio-Economic Index of Occupational Status* (ISEI) (Ganzeboom & Treiman, 1996). The original occupation code in the CFPS 2014 dataset was recorded using the Chinese Standard Classification of Occupations (CSCO), including eight categories (e.g., government/party/people's organization, state-owned/collectively owned public institution, state-owned/state-controlled enterprise, private enterprise, enterprise invested in by foreign, other, individual/family, and residential community committee/village committee) with 595 occupation codes. The original occupational code was then converted to the International Standard Classification of Occupation code (ISCO-88), which has 10 categories (e.g., legislators/senior officials and managers, professionals, technicians, associate professionals, clerks, service workers, shop and market sales workers, craft and related workers, plant and machine operators and assemblers, elementary occupations, and armed forces) and 390 occupational classifications. Each ISCO-88 code was matched with the ISEI score to arrive at the final occupational score, ranging from 16 to 90. Higher scores indicate a higher occupational status. Davis et al. (1999) mentioned that scaling from 16 to 90 causes ISEI scores that may have very different means and standard deviations depending on the distribution of the family's SES. Therefore, the ISEI score was normalized using the Z-score, the same approach used in Davis et al.'s (1999) study.

The net family income per capita was developed by the study investigators by dividing the family's total annual net income over 2014 from different sources (e.g., wages, business profits, government-based transfer income, financial investment gains, rental income, etc.)

divided by family size (total number of people in the household). To give the best fit of the data, the quartile of net family income per capita was used in this dissertation, including four categories: the lowest 25%, the lower 25%, the upper 25%, and the highest 25%.

Family Expectations on Children's Future Achievement

Primary caregivers and children responded to seven questions on family expectations related to children's future achievement. Questions included, "How important is the family's social status to a child's future achievement?", "How important is the family's economic condition to a child's future achievement?", "How important is the level of education to a child's future achievement?", "How important is the family's social connections to a child's future achievement?", "How important is the gifted talent to a child's future achievement?", "How important is the effort to a child's future achievement?", and "How important is good luck to a child's future achievement?" Respondents indicated their responses on a 10-point Likert scale, ranging from *least important* to *most important* (0 = least important, 10 = most important). The Cronbach alpha coefficient for the primary caregiver report was .84, and for the child, the alpha was .79. The seven items were averaged to create a score of family expectations on children's future achievements. Higher scores indicate higher values for family expectations on children's future achievement.

Nurturant-Involved Parenting

Twelve items from the child questionnaire were used to assess two dimensions of nurturant-involved parenting: emotional support and instrumental support. The children responded to the items on a 5-point Likert scale, ranging from *never* to *always* (1 = never, 5 = always). In line with the study by Wang et al. (2019), emotional support was assessed by eight items: "The parents/guardians encouraged you to do things with great effort," "When you did

something wrong, the parents/ guardians would ask about the reasons and talk to you about what you should do,” “The parents/guardians spoke to you in a warm and friendly voice,” “The parents/guardians encouraged you to think independently,” “The parents/guardians told you the reason when asking you to do things,” “The parents/guardians enjoyed talking things over with me,” “The parents/guardians praised you,” and “The parents/guardians asked you what happened to you at school.” The items were originally from the “care” domain of the Parental Bonding Instrument (PBI) (Parker et al., 1979; Wilhelm et al., 2005), which evaluated closeness or support from parents. The eight items were averaged to generate a score for emotional support. A higher score indicated stronger emotional support. Cronbach’s alpha coefficient for emotional support was .75.

Instrumental support was assessed using four items. The four items included: “The parents/guardians checked your homework,” “The parents/guardians helped you with your schoolwork,” “The parents/guardians told stories to you,” and “The parents/guardians played with you, e.g., playing chess, playing outside.” The children responded to these questions on a 5-point scale from 1 = never to 5 = always. The four items were averaged to generate a score for instrumental support. A higher score indicates stronger instrumental support. Cronbach’s alpha coefficient for instrumental support was .68.

Teacher–Student Relationship

Three items were used to evaluate children’s perception of the teacher–student relationship on a 5-point Likert scale (1 = very unsatisfied, 5 = very satisfied). Items included the children’s satisfaction with their general class teacher, Chinese teacher, and mathematics teacher. The three items were averaged to generate a score of the teacher–student relationship. A higher

score indicates a better teacher–student relationship. The Cronbach’s alpha coefficient for the final 3-item scale is .74.

Academic Self-Regulation

Academic-oriented self-regulation was assessed using five items drawn from the child questionnaire. Items included “I pay close attention to the details,” “I am careful in my study,” “I will finish homework first and then play,” “I always start doing my homework right after it is assigned,” and “I will put things in order when they are in a mess.” The children responded to the items on a 5-point Likert scale (1 = totally agree, 2 = agree, 3 = disagree, 4 = totally agree, and 5 = neither agree nor disagree). These five items were derived from 12 questions about self-regulated behaviors in the child questionnaire. The five items (indicated above) related to academic performance were considered. The five items were averaged to generate a score for academic self-regulation. A higher score indicates a stronger ability for academic self-regulation. The Cronbach’s alpha coefficient of the final 5-item scale was .72.

Academic Achievement

Children’s academic achievement was measured by primary caregiver reports. Primary caregivers were asked, “What do you know about your child’s Chinese language/math scores last semester?” Their responses were recorded on a 4-point Likert scale, ranging from 1 to 4 (1 = excellent, 2 = good, 3 = average, and 4 = poor). The responses were reverse coded such that higher scores would indicate higher Chinese language/math achievement.

Analytical Strategies

This study examined the associations between family SES, family expectations on children’s future achievement, and children’s academic outcomes through the mediating mechanisms of nurturant-involved parenting, teacher–student relationship, and academic self-

regulation. SPSS 25.0 was used to clean the data and conduct some preliminary analysis. Mplus 8.3 was used to deal with missing data and test the measurement and structural models. The data analyses followed multiple steps. First, preliminary analyses were conducted to understand the data quality, sample characteristics, and assumption checks for further analysis before testing the hypotheses. The preliminary analyses included missing value detection, normality checks, correlation analysis, independent-sample t-test, and confirmatory factor analysis (CFA).

Missing Data

The data were first checked for completeness since missing data can introduce potential bias in parameter estimations and strongly affect the results (e.g., statistical power may decrease, and standard error may increase). Although missing values are common in the realm of social studies (Enders, 2003), estimations are likely biased when more than 10% of the data are missing (Bennett, 2001). The examination of the dataset showed that the missing data were less than 2% across variables, with one exception (occupational status, more than 15%).

According to Rubin (1976), there are three types of missing data: missing not at random (MNAR), missing at random (MAR), and missing completely at random (MCAR). It is essential to identify whether the data are missing completely at random because the MCAR assumptions indicate that missingness has nothing to do with the study participant. Little's (1988) MCAR test was carried out to test variables that were inclusive of missing values. According to the findings, the data were missing completely at random ($\chi^2 [df] = 59.827 [70], p = ns$). The missing data for family SES variables were first checked in the 2016 wave and replaced if the information was available. Six families' data were used from the 2016 wave for the education level. For net family income per capita, 13 families' information was selected, resulting in the missing data being less than 1%. Fifty-nine families' data were used for occupational status, leading to a

significant reduction in missing data (around 11%). According to Baraldi and Enders (2010), the method of multiple imputations (MI), which addresses MCAR data, is recommended, allowing researchers to make full use of the available cases to predict the missing values and provide the least biased estimates. Mplus 8.3 was applied to deal with missing data using the maximum likelihood, and 20 imputed datasets were specified.

Normality Check

This study conducted skewness and kurtosis tests to check normality among variables and to determine whether the assumption of multivariate normality for the subsequent analysis of parameter estimation in structural equation modeling (SEM) would be held. Highly skewed distribution and excessive kurtosis can affect standard errors, parameter estimates, and overall fit (Bagozzi & Yi, 1988). While there is no clear cutoff for the “acceptable” range, the value for skewness lower than -1 or greater than +1 indicates a significantly skewed distribution (Bulmer, 1979; Hair et al., 2017). A more widely accepted range for skewness is between -2 and +2 (Bryne, 2010; George & Mallery, 2010; Hair et al., 2010). Similarly, the value for kurtosis greater than +1 or less than -1 indicates that the distribution is too peaked or flat (Hair et al., 2017). A more general guideline for kurtosis is the value between -2 and +2 (George & Mallery, 2010). The skewness and kurtosis values of the variables in this dissertation were within the accepted range. However, the variable family expectations on children’s future achievement were observed to have a significantly peaked distribution in comparison to other variables, with a large variance range. For this reason, Blom’s (1958) transformation was conducted for this variable (for both primary caregiver report and child report) to give the best fit of the data, and the transformed scores were used for all direct and indirect models.

Correlation Analysis

Pearson's correlation analysis was performed to examine the binary correlations among the variables.

Independent Sample T-Test

Independent-Sample t-test was conducted to examine mean differences across gender and location of family residence for all the constructs.

Confirmatory Factor Analysis

CFA was conducted using the Mplus 8.3 to examine the measurement quality of all latent constructs, including family SES, family expectations on children's future achievement, nurturant-involved parenting, and academic achievement. The CFA analysis can determine if the selected indicators have significant loadings on the latent variables. The model fit statistics, including comparative fit index (CFI), root-mean-square-error of approximation (RMSEA), standardized-root-mean-square residual (SRMR), and tucker-lewis index (TLI), were used to test the measurement model (Hu & Bentler, 1999).

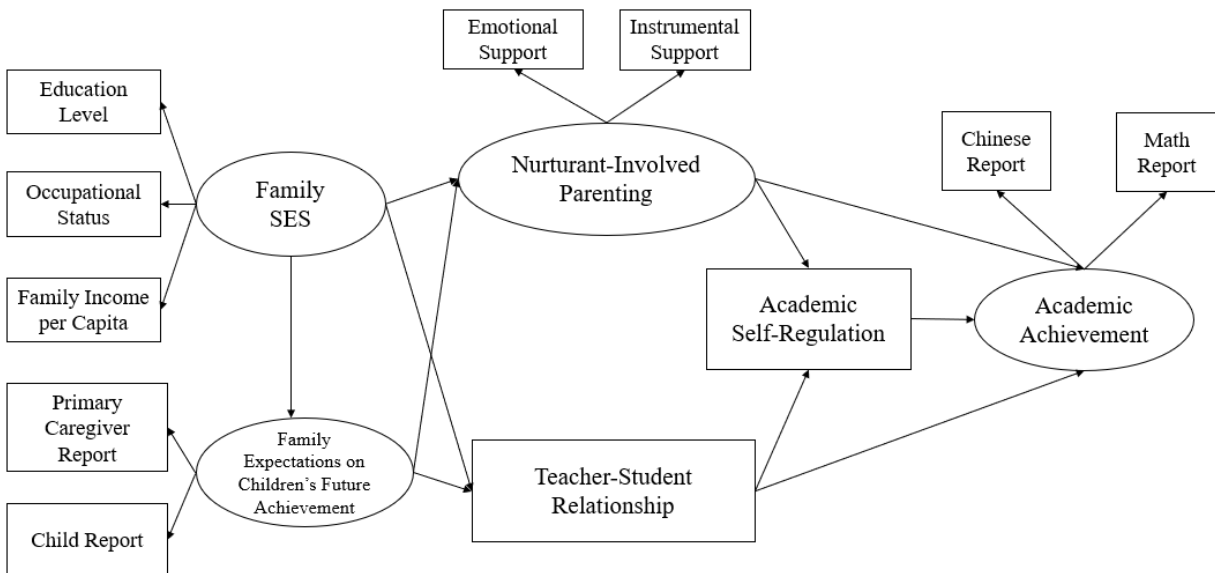
Main Analysis

After the acceptable measurement model was established, this study applied SEM with the structural regression modeling technique to test the hypothesized model (see Figure 4) and to answer the research questions. The parameter estimation method used in this study is the maximum likelihood (ML) technique, which allows researchers to take complete advantage of the data since all observed cases were calculated in the estimation function of ML. The study tested each hypothesis by examining the corresponding fit to the model. The child gender and household registration (urban/rural) were controlled in the hypothesized model. To evaluate and improve the model fit, multiple goodness-of-fit indices (i.e., CFI, RMSEA, SRMR, and TLI)

were applied. For both the measurement and the hypothesized model, when CFI is greater than .95, RMSEA less than .06, SRMR less than .08, and TLI greater than .95, they indicate the overall model fits the data well (Browne & Cudeck, 1993; Hu & Bentler, 1999; Sharma et al., 2005).

Figure 4

The setting of the structural equation model



Chapter 5: Results

Correlation Analysis

Table 2 illustrates the binary correlations among all observed variables. This table shows that many of the key variables were significantly correlated in the expected directions, with few exceptions. For example, family SES variables were negatively associated with the child’s report on family expectations on children’s future achievement but had no significant association with the primary caregiver’s report on family expectations on children’s future achievement. Neither child report nor primary caregiver report on family expectations on children’s future achievement was significantly correlated with nurturant-involved parenting (i.e., emotional support and instrumental support). Academic self-regulation was not significantly correlated with children’s academic achievement (i.e., Chinese and math scores).

Table 2

Intercorrelations among all variables

Constructs	1	2	3	4	5	6	7	8	9	10	11
1. NFIPC	-										
2. ED	.33**	-									
3. OS	.29**	.51**	-								
4. FE(C)	-.11**	-.07	-.11**	-							
5. FE(P)	-.03	-.05	-.04	.21**	-						
6. ES	.08*	.17**	.11**	-.02	.01	-					
7. IS	.09*	.28**	.23**	-.05	-.03	.49**	-				
8. TSR	.10**	.06	-.02	.09*	.04	.15**	.08*	-			
9. ASR	-.10*	-.05	-.05	.19*	.09*	.24**	.12**	.16**	-		
10. CS	.15**	.21**	.11**	-.06	.01	.23**	.13**	.09**	.06	-	
11. MS	.16**	.23**	.13**	-.05	.01	.22**	.16**	.16**	.01	.58**	-

Note. * $p < .05$; ** $p < .01$; NFIPC = net family income per capita; ED = education level; OS =

occupational status; FE = family expectations; ES = emotional support; IS = instrumental

support; TSR = teacher–student relationship; ASR = academic self-regulation; CS = Chinese score; MS = math score; P = primary caregiver report; C = child report.

Independent-Sample T- Test

The Independent-Sample t-test was conducted to examine child gender differences on the family SES (net family income per capita, education level, and occupation status), family expectations on children’s future achievement (child report and primary caregiver report), nurturant-involved parenting (emotional support and instrumental support), teacher–student relationship, academic self-regulation, and academic achievement (Chinese and math score), see Table 3. Significant differences in the scores of teacher–student relationship and Chinese scores were found between girls and boys. Girls reported more satisfying teacher–student relationships than boys, and girls achieved higher Chinese scores than boys.

In addition, the Independent-Sample t-test was conducted to examine household registration differences on the family SES (net family income per capita, education level, and occupation status), family expectations on children’s future achievement (child report and primary caregiver report), nurturant-involved parenting (emotional support and instrumental support), teacher–student relationship, academic self-regulation, and academic achievement (Chinese and math score), see Table 4. There were significant differences in the scores of family SES, family expectations on children’s future achievement (child report), nurturant-involved parenting (emotional support and instrumental support), and academic achievement (Chinese and math scores) between rural and urban families. For example, urban families reported more family income, higher education levels, and better occupation status than rural families. Children in rural families reported a higher score in the family expectations on children’s future achievement than children in urban families. Urban children reported receiving more nurturant-

involved parenting, including emotional and instrumental support, than rural children. Overall, children in urban areas reported better academic achievement than children in rural areas.

Table 3

Gender Differences on the family SES, family expectations on children's future achievement, nurturant-involved parenting, teacher–student relationship, academic self-regulation, and academic achievement

	Girls		Boys		t
	M	SD	M	SD	
NFIPC	2.31	1.04	2.28	1.03	.39
ED	2.26	1.21	2.40	1.33	-.34
OS	-.01	1.03	.01	1.03	-1.53
FE(C)	7.23	1.57	7.38	1.64	-1.31
FE(P)	7.49	1.66	7.53	1.46	-.38
ES	3.55	.60	3.50	.61	1.0
IS	2.60	.83	2.68	.81	-1.25
TSR	4.42	.76	4.31	.77	2.0*
ASR	3.75	.63	3.67	.66	1.73
CS	2.98	.92	2.76	.96	3.34**
MS	2.87	1.0	2.84	1.0	.33

Note. * $p < .05$; ** $p < .01$; NFIPC = net family income per capita; ED = education level; OS = occupational status; FV = family expectations; ES = emotional support; IS = instrumental support; TSR = teacher–student relationship; ASR = academic self-regulation; CS = Chinese score; MS = math score; P = primary caregiver report; C = child report.

Table 4

Household Registration Differences on the family SES, family expectations on children's future achievement, nurturant-involved parenting, teacher–student relationship, academic self-regulation, and academic achievement

	Rural		Urban		t
	M	SD	M	SD	
NFIPC	2.11	.97	2.56	1.07	-6.2**
ED	1.96	1.1	2.86	1.33	-.10.12**

OS	-.25	.81	.39	1.13	-8.2**
FE(C)	7.46	1.58	7.10	1.63	3.11**
FE(P)	7.55	1.58	7.47	1.53	.71
ES	3.46	.58	3.62	.62	-3.72**
IS	2.54	.79	2.79	.85	-4.3**
TSR	4.36	.74	4.35	.81	.20
ASR	3.74	.62	3.66	.69	1.57
CS	2.77	.95	2.98	.93	-3.14**
MS	2.72	1.0	3.04	.95	-4.7**

Note. * $p < .05$; ** $p < .01$; NFIPC = net family income per capita; ED = education level; OS = occupational status; FE = family expectations; ES = emotional support; IS = instrumental support; TSR = teacher–student relationship; ASR = academic self-regulation; CS = Chinese score; MS = math score; P = primary caregiver report; C = child report.

Confirmatory Factor Analysis

The measurement model was tested for family SES, family expectations on children’s future achievement, nurturant-involved parenting, and academic achievement. The model indices indicated a good fit to the data ($\chi^2 [N = 802, 21] = 43.98, p < .001, CFI = 0.98, TLI = 0.97, RMSEA = 0.04, SRMR = 0.03$). The factor loadings of net family income per capita, education level, and occupational status on family SES were .43, .78, and .64, respectively. Meanwhile, the factor loadings of the primary caregiver report and the child report on family expectations on children’s future achievement were .30 and .70, respectively. Similarly, the factor loadings of emotional support and instrumental support on nurturant-involved parenting were .66 and .75, respectively. Lastly, the factor loadings of Chinese and math scores on academic achievement were .73 and .80, respectively. It should be noted that one of the factor loadings for family expectations on children’s future achievement was low (although acceptable). One of the reasons for this may be that primary caregivers and their children may vary in their interpretation of the different items used to assess the construct.

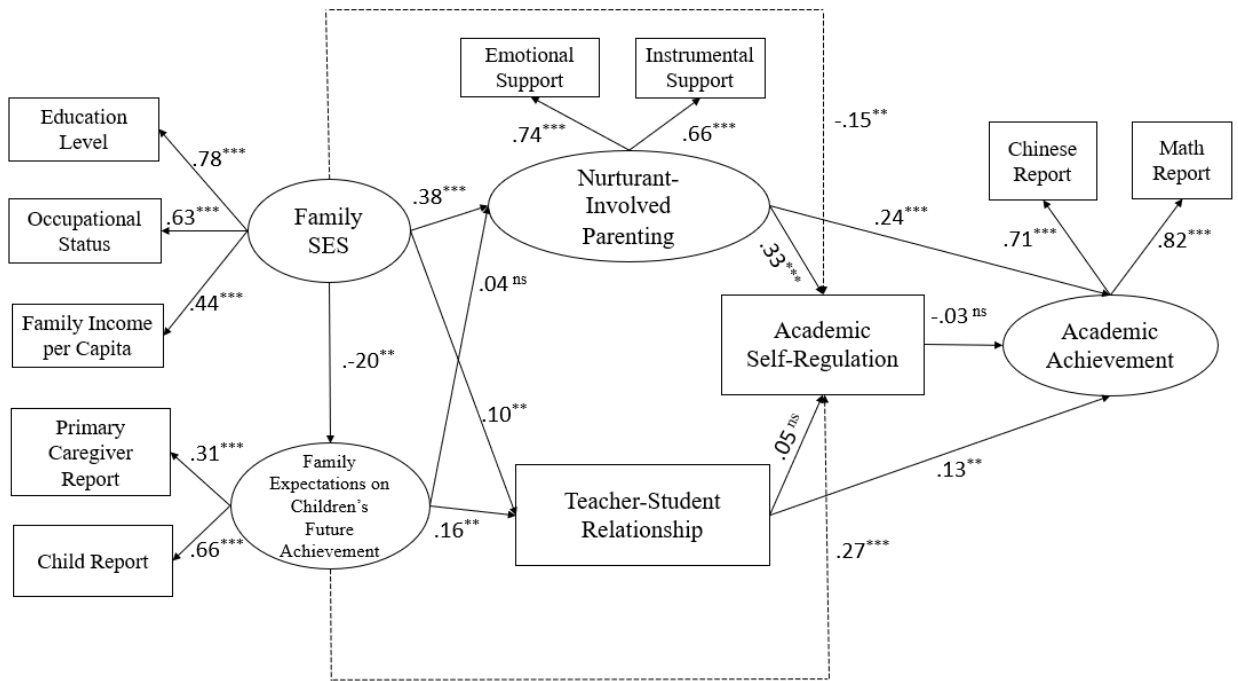
Path Analysis

The Direct and Indirect Associations Between Family SES and Children's Academic

Achievement

This study first conducted a fully recursive model to test the hypothesized conceptual model that included all possible pathways between the variables. The recursive model's evaluation provided a full understanding of all the possible pathways in the model and aided in ascertaining the significant additional pathways that were not included in the hypothesized model (see Figure 5). According to the findings of the recursive model, this study added the following additional pathways to the hypothesized model: a direct path between family SES and academic self-regulation, and a direct path between family expectations on children's future achievement and academic self-regulation (see the dashed line in Figure 5). The difference in chi-square between the fully recursive model ($\chi^2 [N = 802, 32] = 86.56, p < .05; CFI = .95, TLI = .92, RMSEA = .05, SRMR = .03$) and the revised hypothesized model ($\chi^2 [N=802, 33] = 87.02, p < .05; CFI = .96, TLI = .92, RMSEA = .05, SRMR = .03$) was not significant, $\Delta \chi^2 (1) = .46, p = ns$, thereby suggesting that the revised hypothesized model exhibited a more parsimonious fit with the data. Therefore, the revised hypothesized model was used. The revised hypothesized model explained 19% of the variance in children's academic achievement. The direct effect of family SES on children's academic achievement was found to be significant (refer to Table 5). In addition, two indirect pathways were found to be significant: (a) the pathway between family SES and children's academic achievement through nurturant-involved parenting, and (b) the pathway between family SES and children's academic achievement through teacher-student relationship (refer to Table 6).

Figure 5



A final model linking family SES and children's academic achievement for the entire study sample was tested. Solid lines depict the original hypothesized model, and dashed lines reveal the additionally significant pathways selected from the recursive model. The model also displays standardized coefficients. Child gender and household registration (rural and urban) effects are controlled for in the model. * $p < .05$, ** $p < .01$, *** $p < .001$.

Table 5*Results of direct test for the model linking family SES and children's academic achievement*

	Estimate	Estimate	Estimate	Estimate	Estimate
Direct Effect	(Girl)	(Boy)	(Rural)	(Urban)	(Full Model)
FSES to AA	.23***	.23***	.16**	.24**	.25***

Note. * $p < .05$; ** $p < .01$; *** $p < .001$; FSES = family socioeconomic status; AA = academic achievement.

Table 6*Results of indirect test for the model linking family SES and children's academic achievement*

	Estimate	Estimate	Estimate	Estimate	Estimate
Indirect Effect	(Girl)	(Boy)	(Rural)	(Urban)	(Full Model)
FSES to AA through nurturant-involved parenting	.09***	.09***	.06**	.09**	.09***
FSES to AA through teacher–student relationship	ns	ns	ns	ns	.01*
FSES to AA (sum of indirect effects)	.10***	.10***	.06**	.10***	.10***

Note. * $p < .05$; ** $p < .01$; *** $p < .001$; FSES = family socioeconomic status; AA = academic achievement.

Table 7

Results of indirect test for the model linking family expectations on children's future achievement and children's academic achievement

	Estimate	Estimate	Estimate	Estimate	Estimate
Indirect Effect	(Girl)	(Boy)	(Rural)	(Urban)	(Full Model)
FEOCFA to AA through teacher–student relationship	ns	.04*	.03*	ns	.02*
FEOCFA to AA (sum of indirect effects)	ns	.07***	ns	ns	ns

Note. * $p < .05$; ** $p < .01$; *** $p < .001$; FEOCFA = family expectations on children's future achievement; AA = academic achievement.

The Difference in the Pathways Between Family SES and Children's Academic Achievement on Child Gender

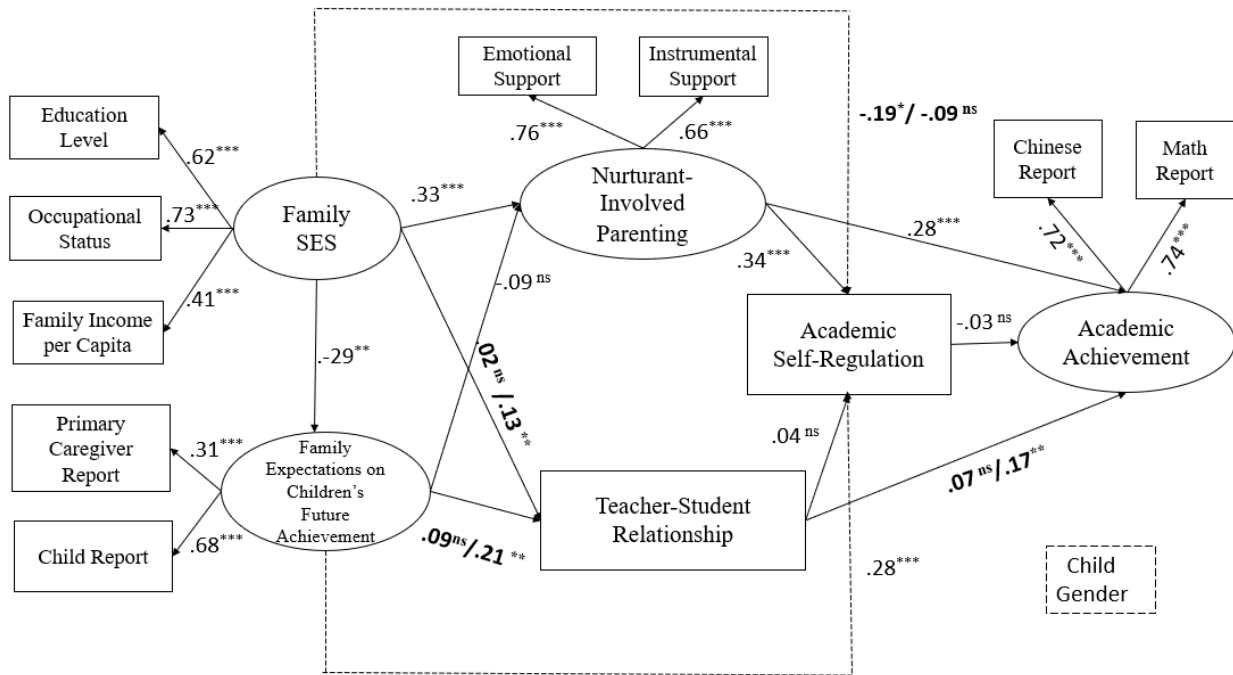
To test the research question of whether differences existed in the pathways between family SES and children's academic achievement on child gender, this study first compared a fully unconstrained model (most restrictive) to a fully constrained model (least restrictive) in which the factor loadings and structural paths were constrained equally across girls and boys. The model fit indices for the fully unconstrained model showed a relatively good model fit (χ^2 [N = 802, 76] = 132.01, $p < .05$; CFI = .95, TLI = .93, RMSEA = .04, SRMR = .04). Similarly, the model fit indices for the fully constrained model indicated a relatively good model fit (χ^2 [N = 802, 90] = 176.14, $p < .05$; CFI = .93, TLI = .91, RMSEA = .05, SRMR = .05). A significant difference in chi-square was found between the fully unconstrained model and the fully constrained model ($\Delta \chi^2$ [14] = 42.13, $p < .05$), suggesting path variations across girls and boys.

Then, a series of chi-square difference tests that made it possible to free up each path was conducted to test which path differed across girls and boys.

According to the results, four paths (family SES and teacher–student relationship, family SES and academic self-regulation, family expectations on children’s future achievement and teacher–student relationship, and teacher–student relationship and academic achievement) differed significantly across girls and boys. Therefore, a partially constrained model was applied wherein the paths that differed across girls and boys were unconstrained, and the rest of the paths were constrained to be equal across girls and boys. The partially constrained model indicated a relatively good model fit (χ^2 [N = 802, 84] = 164.31, $p < .05$; CFI = .93, TLI = .91, RMSEA = .05, SRMR = .05).

The partially constrained model was used as the final model to explain the variance in the associations between girls and boys (see Figure 6). Overall, the final model showed 18% and 19% variance in children’s academic achievement for girls and boys, respectively. The direct effect of family SES on children’s academic achievement was found to be significant (see Table 3). Regarding the indirect effects, the pathway between family SES and children’s academic achievement through nurturant-involved parenting, was found to be similar in strength for girls and boys (see Table 6). The pathway between family SES and children’s academic achievement through teacher–student relationship was found not to be significant for both girls and boys (see Table 4). One indirect pathway was only significant for boys: the pathway between family expectations on children’s future achievement and children’s academic achievement through teacher–student relationship (see Table 7).

Figure 6



A final model linking family SES and children’s academic achievement for the entire study sample was tested. Solid lines depict the original hypothesized model, and dashed lines reveal the additional significant pathways selected from the recursive model. The model also displays standardized coefficients. Coefficients in front of the slash are for girls, and after the slash are for boys. * $p < .05$; ** $p < .01$; *** $p < .001$.

The Difference in the Pathways Between Family SES and Children’s Academic Achievement on Household Registration (Rural and Urban)

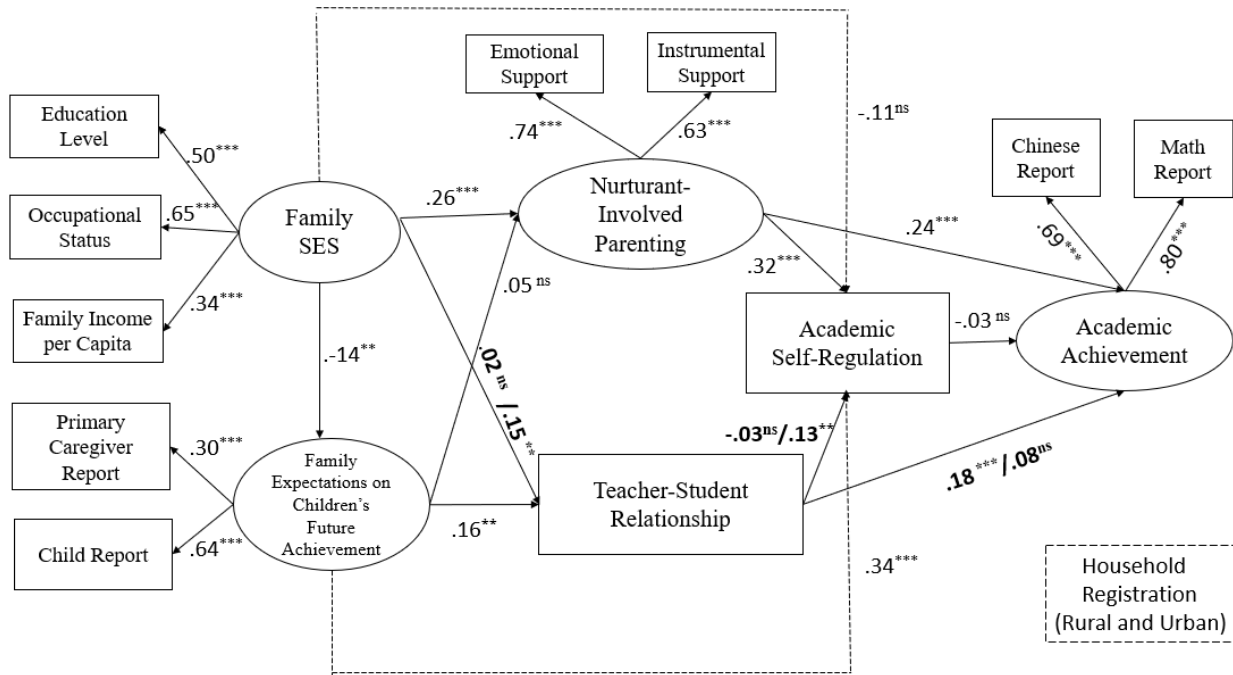
To test the research question of whether there were differences in the pathways between family SES and children’s academic achievement across rural and urban families, this study also compared a fully unconstrained model ($\chi^2 [N = 802, 76] = 121.17, p < .05$; CFI = .96, TLI = .94, RMSEA = .04, SRMR = .04) to a fully constrained model ($\chi^2 [N = 802, 90] = 159.09, p < .05$; CFI = .93, TLI = .92, RMSEA = .04, SRMR = .05). A significant difference in the chi-square of the fully unconstrained model and the fully constrained model ($\Delta \chi^2 [14] = 37.9, p < .05$) was

found, thus indicating the path variations across rural and urban families. Subsequently, a series of chi-square difference tests allowing to free up each path was conducted to test what path differed across rural and urban families.

The results showed that three paths (family SES and teacher–student relationship, teacher–student relationship and academic self-regulation, and teacher–student relationship and academic achievement) differed significantly for rural and urban families. A partially constrained model was utilized in which the paths that differed across both rural and urban families were unstrained, and the rest of the paths were constrained to be equal. Notably, the constrained model indicated a relatively good model fit (χ^2 [N = 802, 85] = 150.36, $p < .05$; CFI = .94, TLI = .92, RMSEA = .04, SRMR = .05). Thus, the partially constrained model was used as the final model to explain the variance in the associations across rural and urban families (see Figure 7). Overall, in terms of children’s academic achievement for rural and urban families, the final model showed 13% and 18% variance, respectively.

The direct effect of family SES on children’s academic achievement was found to be significant (Table 5). Furthermore, the same indirect pathway, the path between family SES and children’s academic achievement through nurturant-involved parenting, was found to be significant for rural and urban families (see Table 6). The pathway between family SES and children’s academic achievement through teacher–student relationship was found not to be significant for rural and urban families (see Table 6). One indirect pathway was only significant for rural families: the pathway between family expectations on children’s future achievement and children’s academic achievement through teacher–student relationship (see Table 7).

Figure 7



A final model linking family SES and children's academic achievement for the entire study sample was tested. Solid lines depict the original hypothesized model, and dashed lines reveal the additional significant pathways selected from the recursive model. The model also displays standardized coefficients. Coefficients in front of the slash are for rural families, and after the slash are for urban families. * $p < .05$; ** $p < .01$; *** $p < .001$.

Chapter 6: Discussion

The relationship between family SES and academic achievement has always been a popular topic in pedagogy, psychology, and sociology. With the social and economic development in China, more and more researchers have begun to focus on the mediator and moderator variables between family SES and academic achievement (Chen et al., 2018; Li & Qiu, 2018; Sirin, 2005). However, very little is known about how family SES influences children's academic achievement through the interplay of individual, family, and school factors in the Chinese context. Rooted in propositions within the bioecological framework (Bronfenbrenner, 1979, 1986, 1989; Bronfenbrenner & Morris, 2006), academic socialization model (Taylor et al., 2004), family stress theory (Conger et al., 2010), and social cognitive theory (Bandura, 1986, 1991; Zimmerman & Schunk, 2001), the present study explored the pathways of association between family SES and children's academic achievement through analyzing family expectations on children's future achievement, parenting strategies, children's relationships with their teachers, and academic self-regulation. The findings constitute an attempt to add to our understanding of the influential mechanism of family SES on academic achievement in the Chinese context. In this chapter, the findings following the research questions and hypotheses are discussed first. Then the variations in the associations across child gender and household registration are addressed.

Family SES and Academic Achievement

Studies (e.g., Chen et al., 2018; Coleman et al., 1966) have found that among the factors that influence children's academic achievement, family SES—such as parental education level, occupational status, and family income—can explain most of the variance in children's academic outcomes in high-income countries. The positive correlation between family SES and children's

academic achievement is well documented across cultural communities (Coleman & Hopkins, 1966; Liu et al., 2020; Sirin, 2005). Nonetheless, the strength of the relation between family SES and academic achievement varies across different cultural backgrounds (Liu et al., 2020; Sirin, 2005). For example, Sirin (2005) conducted a meta-analysis with samples mainly from the United States and confirmed a moderate correlation between family SES and academic achievement, with an average of 0.29 and a median of 0.25. Recently, Liu et al. (2020) conducted a meta-analysis of more than 70 samples from mainland China and demonstrated a moderate relation between family SES and academic achievement ($r = 0.24$). These meta-analyses argued that the relation might be moderated by factors such as the definition and measurement of SES, the measuring subjects of academic achievement, and the student characteristics (e.g., gender and grade level).

This study, in line with other Chinese studies (Chen et al., 2018; Zha & Hall, 2019), measured family SES by three dimensions: education level, occupational status, and net family income per capita. To make the measurement more culturally appropriate and remain the international convention, the revised international occupation codes were applied to capture the primary caregiver's occupational status. Consistent with previous studies (Liu et al., 2020; Sirin, 2005), these findings demonstrated a positive and moderate correlation between family SES variables and academic achievement in the Chinese context. This study also found that the direct effect of family SES on children's academic achievement occupied a larger percentage of the total effect than the indirect effect did, indicating a clear and strong relationship between family SES and academic achievement. Overall, the higher the primary caregiver's education level, occupational status, and income, the better the children's academic achievement (e.g., Chinese and Math scores), and vice versa. Due to rapid urbanization and accelerated economic growth,

inequality in income and education has become very apparent between low-SES families and middle- and high- SES families in China (Wu, 2013; Yang et al., 2014). Families with middle and high SES take advantage of their economic resources and social power to get better educational opportunities for their children (Treiman & Yip, 1989; Yang et al., 2014), such as sending their children to better schools. Chinese parents also tend to buy high-priced school district houses to secure high-quality schools. Access to top public schools or high-quality private schools may lead to a strong relationship between family SES and academic achievement (Liu et al., 2020).

The Roles of Family Expectations, Nurturant-Involved Parenting, Teacher–Student Relationship, and Academic Self-Regulation

Based on Talyor et al.'s (2014) academic socialization model, socioeconomic and cultural contexts influence parental involvement and behavior and further foster children's adjustment and academic outcomes. Although Taylor et al.'s (2004) academic socialization model stressed the importance of parental factors on children's academic outcomes, it is important to consider the teacher–student relationship as an important component in children's academic socialization. In addition, self-regulation mediates the influence of parents and teachers on academic achievement (e.g., Baker, 2006; Hoover-Dempsey & Sandler, 2005; Li & Qiu, 2018; Wang & Cai, 2017). Proximal learning outcomes, such as self-regulation and academic self-efficacy, maybe more significantly impacted by parental involvement than direct measures of academic achievement, such as grades (e.g., Daniel et al., 2016; Hoover-Dempsey et al., 2001; Hoover-Dempsey & Sandler, 2005; Wang & Cai, 2017). Students who perceive positive relationships with their teachers are more likely to display higher self-regulation (e.g., Baker, 2006; Roeser et al., 1996) and higher academic achievement (e.g., Berry, 2012; Zee & Bree,

2017). Thus, this dissertation attempted to develop a more comprehensive academic socialization model to reflect the process of children's academic socialization. The order of the constructs is derived from the academic socialization model and social cognition theory. However, there is the possibility for bidirectional and reciprocal effects within this model. Future studies using longitudinal data should examine the possibility of these effects.

The associations between key constructs were examined. Although this study found significant associations among the key constructs of the hypothesized model, the associations among teacher–student relationship, academic self-regulation, and academic achievement were not significant. Additionally, this study revealed the mediating role of nurturant-involved parenting and teacher–student relationship in the association between family SES and academic achievement. However, academic self-regulation did not play a mediating role. The following sections discuss the findings in more detail.

Family expectations on Children's Future Achievement

The educational expectation is recognized as the beliefs that parents and children hold about the children's future academic achievement (Rimkute et al., 2012; Wang & Benner, 2014). Studies have found that family SES is strongly associated with parents' and children's educational expectations in the U.S. (Lareau, 2011; Li & Xie, 2020). Generally, prior research indicated that higher SES families are more likely than lower SES families to hold higher educational expectations of their children (Bozick et al., 2010; Goyette & Xie, 1999). However, some studies argued that the influence of SES on educational expectations varies across cultures due to different cultural beliefs (Li & Xie, 2020; Liu & Xie, 2016; Ren et al., 2021). For example, children's educational expectations in Caucasian American families are much more influenced by family SES than those of Asian American families (Liu & Xie, 2016). High-SES

American parents tend to hold high educational expectations for their children and, therefore, engage in more educational activities to foster their children's academic success (Lareau, 2011).

But studies have found that parents and children in Asian American families value education highly, hold high educational expectations, and put great effort into studying, regardless of low- or high- SES background (Hsin & Xie, 2014; Li & Xie, 2020). All these characteristics further benefit Asian American children's academic achievement (Hsin & Xie, 2014; Li & Xie, 2020; Liu & Xie, 2016). Similarly, parents and children in East Asian societies tend to hold high education-related beliefs, irrespective of family SES. Ren et al's (2021) study revealed a weak link between family SES and educational expectations among adolescents who perceived economic hardship in the family. Interestingly, this dissertation discovered a significant and negative association between family SES and family expectations on children's future achievement. Also, family expectations on children's future achievement did not predict parenting strategies or academic achievement; instead, family expectations were positively associated with teacher-student relationship and academic self-regulation. In addition, family expectations indirectly influenced children's academic achievement through their perceptions of teacher-student relationships.

Education has been highly valued in China for centuries and is very important for Chinese families (Gu, 2008). "Knowledge can change fate," a well-known notion in China, has inspired many children in low-SES families, especially in rural areas of China, to study hard to change their social class and improve their livelihood. It is reasonable for parents and children in low-SES families to value more the importance of future achievement in China. Rural migrant children, mostly from low-SES families in China, believe that studying hard and being admitted to the university is the main avenue to change their fate and have a better life (Chen, 2022).

Therefore, they are more likely to follow teachers' instructions, listen in class, and do their homework on time (Chen, 2022). Similarly, unlike students in Western countries, Chinese students show more respect and obedience to their parents and teachers due to the cultural value of filial piety. Especially for rural students, teachers are not only people who teach and solve problems, but also a source of accompaniments and social support in their lives (Cao, 2001). Therefore, a good teacher-student relationship is conducive to cultivating rural students' interest in learning and achieving better academic performance (Wei et al., 2022). In addition, Chinese students tend to perceive learning as a moral endeavor, which makes them value academic achievement and motivates them toward academic success (Wang & Oimerantz, 2009). Further, these students are more likely to become good students in class and, therefore, build positive relationships with teachers and achieve academic success (Xuan et al., 2019).

Nurturant-Involved Parenting

Studies have found that family SES can indirectly influence academic achievement through family variables such as parental expectation, parent-child relationship, and parenting behaviors (Bradley et al., 2001; Chen et al., 2018). Among these family factors, parenting beliefs and behaviors have been identified as one of the most critical factors during children's academic socialization (Taylor et al., 2004). This suggests that, in addition to socioeconomic resources, non-monetary factors, such as parents, significantly impact children's academic achievement. The present study found that nurturant-involved parenting, consisting of emotional support and instrumental support, mediated the influence of family SES on children's academic achievement in the Chinese context. Parents in the middle- or high- SES families are more likely to receive higher education, occupational status, and income. Thereby, they are more likely to discuss school-related issues and concerns with their children, connect with children's feelings, engage

in school activities, and provide homework support, which consequently facilitates their children's academic performance (Li, 2006; Liu, 2008).

The findings also supported the main ideas of Taylor et al.'s (2004) academic socialization model: asking "who parents are" and "what parents do" to fully understand the family effects in shaping a child's academic development. The "who parents are" perspective emphasizes the socioeconomic and cultural characteristics of parents and their associations with children's academic outcomes, while the "what parents do" perspective focuses on parenting behaviors and parent-child relationships in children's academic socialization. An increasing number of studies regarding parental influence on children's academic outcomes have shifted their focus from "what parents do" to "who parents are" (e.g., Li & Qiu, 2019; Taylor et al., 2004; Yamamoto & Sonnenschein, 2016; Zha & Hall, 2019). Family SES has been recognized as an important factor in determining parental behaviors in education (Deng & Treiman, 1997; Li, 2006; Liu, 2008). The findings in the present study support this statement.

At the same time, the findings in this study support the family stress theory, which states that the stress associated with a family's poor economic conditions is associated with conflictual and disorganized family functioning and poor child outcomes (Conger et al., 2010; Yamamoto et al., 2016). Parents in low-SES families often face financial pressure and emotional distress, and therefore, show reduced motivation and capacity to support their children's education (Conger et al., 2010; Linver et al., 2002; Zhang, 2012). However, parenting behaviors—such as parental encouragement and support of children's academic activities—were found to be positively associated with students' academic achievement (e.g., Hung, 2007; Rogers et al., 2009). The present study developed the construct of parental involvement as a more culturally appropriate factor to capture Chinese parents' involvement in children's academic development. The two

dimensions of parental involvement, emotional support, and instrumental support, addressed the positive interaction with children's academic activities, indicating a positive link to academic achievement. The mediation effect of parental involvement suggested that parents should not be convinced that the material and economic conditions alone determine the children's academic achievement. A positive engagement and support of children's academic activities should also be invested in to reduce the negative effect of low SES on children's academic development.

Teacher–Student Relationship

The teacher–student relationship has been indicated as a predictor of children's school success in prior work (e.g., Baker, 2006; Pianta, 1999; Toren & Seginer, 2015). The quality of teacher–student relationships strongly predicted children's achievement even after controlling powerful child and family factors (Conner & McCartney, 2007). Consistent with the previous studies, a positive and significant association was found between teacher–student relationships and children's academic achievement. When the child perceives a better relationship with teachers, they are more likely to achieve better academic performance.

Additionally, family SES has been identified to impact children's school quality in the literature. Previous studies recognized that the school system in the middle- and high-SES communities are often characterized by a high level of teacher efficacy (Belfi et al., 2015), and good teacher-student relationship (Xuan et al., 2019), and effective classroom management (Jong et al., 2014). Therefore, children of higher SES families are more likely to attend better schools and receive better teacher support than children in lower SES families (e.g., Li & Qiu, 2018; Teng, 2019; Wen, 2006; Wu, 2013). In this vein, this study demonstrated that family SES was positively associated with teacher–student relationships, indicating that children of higher SES backgrounds are more likely to attend schools that provide a positive atmosphere.

A recent study by Xuan et al. (2019) explored the underlying mechanism in the relationship between school SES and academic outcomes through the teacher–student relationship in China. The authors argued that school SES is highly related to family SES because “most high SES families were grouped into high SES schools and a majority of low SES families were grouped into low SES schools” (p.6). The findings suggested that school SES could influence children’s academic achievement via children’s perception of relationships with teachers. The present study found a significant mediating role of the teacher–student relationship in the influence of family SES on academic achievement. Generally, children in middle-and high-SES families are more likely to perceive a positive teacher–student relationship than those in low-SES families, and such a relationship can further affect their academic achievement. It should be noted that the present study evaluated the effect of the overall teacher–student relationship on children’s academic achievement. PISA suggested that it would be beneficial that the studies look at the “domain-specific” teacher–student relationship to identify how it influences children’s academics in specific classes (OECD, 2017). Xuan et al. (2019)’s study found that teacher–student relationships only partially mediated the relationship between SES and students’ Math scores, but no mediating role was found in the relationship between SES and students’ Chinese scores.

Academic Self-Regulation

Self-regulated learning has been demonstrated as a good indicator to predict student academic success. Young learners can be autonomously motivated to get involved in school activities, have better problem-solving and coping skills, and put in more effort when they face setbacks (Grolnick & Slowiaczek, 1999; Ryan & Deci, 2000; Wang & Cai, 2017; Wang & Pomerant, 2009). Moreover, self-regulation has been associated with literacy, reading, and

mathematical skills (e.g., Bohlmann & Downer, 2016; Lin et al., 2016). Surprisingly, this study did not find a significant association between academic self-regulation and academic achievement. Li et al. (2018) conducted a meta-analysis of fifty-nine studies to examine the different self-regulation strategies and phases in Chinese students. The results revealed that the overall effect size of self-regulated learning on academic achievement was small for students in elementary and secondary schools. But the authors found a significant effect size on scientific disciplines, such as mathematics and physics. This study did not distinguish how academic self-regulation influences academic achievement in a specific subject, which might not fully reflect the association between self-regulation and academic achievement in the Chinese context.

Several studies (e.g., Baker, 2006; Hoover-Dempsey & Sandler, 2005; Li & Qiu, 2018; Wang & Cai, 2017) have supported the hypothesis that self-regulation mediates the influence of parents and teachers on academic achievement. Proximal learning outcomes, such as self-regulation and academic self-efficacy, may be more significantly impacted by parental involvement than direct measures of academic achievements, such as grades (Daniel et al., 2016; Hoover-Dempsey et al., 2001; Hoover-Dempsey & Sandler, 2005; Wang & Cai, 2017). Students who perceive positive relationships with their teachers are more likely to display higher self-regulation (Baker, 2006; Roeser et al., 1996) and higher academic achievement (Berry, 2012; Zee & Bree, 2017). The current findings did not support the mediating role of self-regulation on the influence of parents and teachers on academic achievement.

Some studies argued that self-regulation is a multidimensional construct and that using a single-factor model of self-regulation may underestimate the different facet's contribution to children's academic outcomes (Huang et al., 2022; Li et al., 2018). The researchers pointed out that the components of self-regulation can be characterized by behavioral, cognitive, and

emotional self-regulation (Cicchetti & Tucker, 1994; Kalpidou et al., 2004; Hammer et al., 2015). Yet other studies found that emotional self-regulation skills can lead to a better association with children's academic outcomes (Sawyer et al., 2014). Emotional self-regulation can also influence academic outcomes through behavioral and cognitive self-regulation and teacher–student relationships (Diaz et al., 2017; Graziano et al., 2007). Emotional self-regulation, referring to the children's ability to control and monitor emotional reactions and expressions, is likely to connect more with parental support and teacher support. The present study targeting academic self-regulation addressed more behavioral self-regulation (e.g., “I will finish homework first and then play,” “I always start doing my homework right after it is assigned”) than emotional self-regulation. The construct of emotional self-regulation was not available in the China Family Panel Study.

Variations across Boys and Girls

According to Bronfenbrenner and Morris (2006), children's gender could differentiate parents' and teachers' perceptions and expectations of their developmental processes and experiences. The analysis of the present study supports the hypothesis that the association between family SES and children's academic achievement through key constructs differed for boys and girls. First, the impact of family SES on boys' academic achievement is slightly greater than that on girls'. The model explained 18% and 19% of the variance in children's academic achievement for girls and boys, respectively. Second, three paths of the effect of family SES on children's academic achievement differed across gender. Family SES and family expectations on children's future achievements were significantly associated with the teacher–student relationship for boys but not for girls. The teachers–student relationship was only significantly associated with the boys' academic achievement.

In the Chinese context, due to the one-child policy and the traditional belief “Yang Er Fang Lao,” which means having a son (rather than a daughter) to take care of the parents in their old age, son preference still exists in Chinese society. Therefore, parents tend to hold different expectations and provide differential educational opportunities for boys and girls, especially in rural areas (Wang, 2005). For example, boys are more likely to attend school and receive longer years of education than girls. Parents believe that boys should receive a better education and get better jobs because they need to provide financial support to the family in the future, including supporting parents in old age (Wang, 2005). Along with the school selection heat, families with higher SES are more likely to select a better school system, especially when they have a boy, reflecting another old notion in China, “Expect one’s son to be talent.” Thus, the boys may have the advantage of attending a better school and experiencing a better teacher–student relationship especially when they are from middle-or high- SES families and the families value the importance of children’s future achievement.

On the other hand, it was found that throughout the school years, teachers were more likely to interact with and be attentive to boys than girls (Ruble et al., 2006). Studies found that teachers’ gender-differentiated responses are most likely to take place in elementary school (Taylor & Gebre, 2016). In elementary school, teachers tended to call on boys more than girls when asking them questions in class. It may explain why the positive teacher–student relationship can predict better academic achievement for boys in a Chinese context.

Variations across Urban and Rural Areas

Although policies such as the one imposing nine-year-long compulsory education have been directed toward increasing children’s enrollment rates at all grades and improving the teaching standard in rural and underdeveloped areas, the education inequality, especially

between urban and rural areas in China, has yet to be resolved (Li & Qiu, 2018; Yang et al., 2014). Additionally, due to the rapid urbanization and fast economic growth, income inequality has become very apparent between low-SES families and middle- and high- SES families (Wu, 2013; Yang et al., 2014). Thus, socioeconomic status has been recognized as an important factor in not only increasing education inequality but also determining students' academic achievement in China (Deng & Treiman, 1997; Li, 2006; Liu, 2008; Wu, 2013).

The analysis of the present study supports the hypothesis that the association between family SES and children's academic achievement through key constructs differed for rural and urban families. First, the impact of family SES on academic achievement is greater for children in the urban than those rural areas. The model explained 18% of the variance in academic achievement for urban children and 13% of the variance in academic achievement for rural children. Three paths of the effect of family SES on children's academic achievement differed across urban and rural families. Family SES significantly influenced teacher–student relationships for urban children but not so for rural children. The teacher–student relationship significantly influenced urban children's academic self-regulation and rural children's academic achievement.

Due to “school selection heat” and “high-priced school district housing” in urban areas, the school quality, especially teacher–student relationships, seems to be a key factor differentiating urban and rural students' academic performance. Children from middle- and high-SES families are more likely to select and attend high-quality schools, which has become a hot social issue affecting educational equality in China (Liu et al., 2020). On the other hand, children from rural areas, believing that “knowledge can change fate,” try their best to study hard and achieve academic success. Positive teacher-student relationships can become an important factor

influencing rural children's expectations and value of school, further stimulating their learning behaviors and academic performance (Xuan et al., 2019).

Summary

Family SES has been recognized as an important factor that increases education inequality and influences students' academic achievement in China (Deng & Treiman, 1997; Li, 2006; Liu, 2008; Wu, 2013). However, there is a lack of discussion on the underlying mechanisms that affect children's academic achievement, such as how family SES can influence academic achievement. The study discussed in this dissertation builds on previous work to explore the associations between family SES and Chinese children's academic achievement, based on criteria such as family expectations on children's future achievement, nurturant-involved parenting, teacher-student relationship, and children's academic self-regulation.

Based on the data collected from the 2014 China Family Panel Studies (CFPS) and structural equation modeling techniques utilized, the study identified that family SES is strongly and positively associated with children's academic achievement. Family expectations on children's future achievement were found to be negatively linked to family SES, which may help children in low-SES families to regain hope for a promising future. Nurturant-involved parenting and teacher-student relationship was found to mediate the relationship between family SES and academic achievement, indicating the importance of parental involvement and school climate in children's academic socialization. Also, teacher-student relationship mediated the pathway between family expectations on children's future achievement and academic achievement. However, academic self-regulation did not significantly mediate the association between family SES and academic achievement. Variations in the association between family SES and children's academic achievement were observed to exist across the child gender and the location of the

family residence. The teacher–student relationships seem to be the key factor that cause the differences between urban and rural students’ academic performance. Teacher–student relationship offers an additional source of adult support that positively influences Chinese children’s academic achievement. In addition, parents tend to show partiality in providing educational opportunities for boys and girls, especially in rural areas.

Limitations

This dissertation extended our existing understanding of how family background can influence Chinese children’s academic achievement, based on factors such as the individual, family, and school systems. However, there are a few limitations to this study. First, the present study used cross-sectional data to evaluate the hypotheses, although CFPS collected data in 2010, 2012, 2014, and 2016. Given that the child questionnaire used in the 2014 wave included specific questions regarding parenting and parental involvement (constructs required for this dissertation) that were available only in the 2014 wave, the data from the 2014 wave were used in this study. In addition, the information on family SES was primarily collected from the 2014 wave. Data collected in the 2016 wave were used as an additional resource in situations where a significant amount of data were missing on SES. However, it should be noted that cross-sectional data cannot be used to identify causal effects among the associations. Also, the results of the cross-sectional mediation model may be different from that of the longitudinal mediation model (Maxwell, Cole, & Mitchell, 2011). It is unclear whether nurturant-involved parenting and teacher–student relationship may mediate the relationship between family SES and academic achievement if longitudinal data are used. Therefore, it is recommended that future studies utilize different waves of CFPS data to re-examine the relationship between family SES and academic achievement.

Second, the conceptualization and operationalization of some constructs used in this study were limited. First, Jaramillo et al. (2017) pointed out the “importance of considering the culture-sensitive nature of self-regulation” when evaluating self-regulation in different cultural contexts, considering the existing studies were mainly conducted in western countries. Therefore, the construct, such as self-regulation, should be studied more broadly and in difference cultural contexts in future research to re-define the construct. Also, some studies argue that self-regulation is a multidimensional construct and therefore using a single-factor model of self-regulation may underestimate different facets’ contribution to children’s academic outcomes (Huang et al., 2022; Li et al., 2018). A multidimensional construct of self-regulation, including cognitive, emotional, and behavioral self-regulation, should be considered in future studies to examine how different dimensions of self-regulation affect the influence of parents and teachers on children’s academic achievement. In addition, PISA suggests that studies should examine the “domain-specific” teacher-student relationship to identify how it influences children’s academics in specific classes (OECD, 2017). It would be interesting to retest the associations using “domain-specific” teacher–student relationships in Chinese and Math classes.

Third, this study analyzed primary caregivers instead of parents to evaluate parenting strategies. Nearly 77% of primary caregivers were parents, of whom 53.2% were mothers. It would be interesting to distinguish between parental and maternal effects in the model to see if there are variations in the associations among the key constructs.

Implications

The findings of this study suggest the need for more detailed work on the association between family characteristics and children’s academic achievement at multiple levels in the Chinese context. At the family level, the family socioeconomic system plays a significant role in

children's academic socialization. However, the non-material resources in the family, such as parental involvement in school learning, communication with children, and emotional support, could weaken the correlation between family SES and children's academic outcomes. Providing parents, the training on cultivating children's good learning behaviors through their own educational engagement (e.g., guiding their children's study and building active communication with teachers) is essential for children's academic performance. In addition, parent education can also increase parents' awareness that parental support from both emotional and instrumental perspectives can help improve children's learning behaviors and further influence academic performance, especially for children in low-SES families.

At the school level, considering the unbalanced educational resources available to children, schools, especially those in rural and low-income areas, should attempt to cultivate a positive teacher-student relationship to kindle students' learning interests, inculcate good learning habits, and thereby support students' academic development. In order to develop positive teacher-student relationship, the schools can provide training opportunities to enhance the teacher's knowledge and improve their teaching skills. On the other hand, parent-teacher conferences can be arranged regularly, especially in rural areas, to create a positive educational environment through communication with parents.

At the national level, relevant departments and policymakers should propose requisite policies to reduce the effect of "school selection heat" and "high-priced school district housing" in urban areas and provide education compulsory in rural and low-income areas to create a balanced allocation of educational resources. The relevant departments should also help improve the quality of teachers and school facilities in rural and low-income to decrease the influence of limited school resources on children's academic performance.

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RESEARCH INTERESTS

- Acculturation gap-distress model in Asian immigrant families
- Parental involvement, children's motivation and self-regulation, and school outcomes
- Parent-child attachment, friendship, and romantic relationships
- Cultural beliefs, parenting practices and children's social-emotional development
- Mixed methods research

MANUSCRIPTS UNDER PREPARATION

Jin, L., & Li, X. (in preparation). Friendship beliefs and practices of Chinese emerging adults: Familial influences and personal experiences.

Zhang, Y., & **Jin, L.** (in preparation). Content Learning, Computer-Based Instruction, Mathematics Learning Interest and Achievement among Middle Schoolers.

TECHNICAL REPORT

Krishnakumar, A., Haste-Jackson, C., **Jin, L.,** & Zhang, X. Y. (2019). *Cross-Cultural Engagement of First-Year Undergraduate Students: Understanding and Demonstrating Diversity, Equity, and Inclusion*. Syracuse, NY: Syracuse University.

CONFERENCE PRESENTATION

Zhang, Y., & **Jin, L.** (2021, April). Content Learning, Computer-Based Instruction, Mathematics Learning Interest and Achievement among Middle Schoolers. Poster presentation at the 2021 AERA Virtual Annual Meeting.

Zhang, Y., & **Jin, L.** (2019, March). Content Coverage, Computer-Based Instruction, Students' Math Interest, and Math Performance among Middle Schoolers. Poster presentation at the 2019 Society for Research in Child Development Biennial Meeting, Baltimore, MD.

Jin, L., & Li, X. (2019, February). Friendship beliefs and practices of Chinese emerging adults: Familial influences and personal experiences. Paper presented at the 48th Annual Meeting of the Society for Cross-Cultural Research, Jacksonville, FL.

Li, X., Mei, L. J., Zhang, Y., **Jin, L.,** & Wang, Y. T. (2018, June). The true heart: Friendship beliefs and values of urban Chinese emerging adults. Paper presentation at the 25th Biennial Meeting of the International Society for the study of behavioral development, Queensland, Australia.

Zhang, Y., & **Jin, L.** (2016, October). Computer use as a tool in 8th graders' classroom instruction and learning: An exploratory study using TIMSS 2011. Poster presentation at the 2016 Special Topic Meeting of the Society for Research in Child Development: Technology and Media in Children's Development, Irvine, CA.

Jin, L. & Moreno, R. (2016, February). The experiences of Chinese immigrants in family-owned businesses: An exploratory study. Paper presentation accepted at the 45th Annual Meeting of the Society for Cross-Cultural Research, Portland, OR.

Ramadoss, K., **Jin, L.**, & Myers-Walls, J. (2014, November). Transnational families from the Indian sub-continent: An exploratory study. Paper presentation at the 2014 Annual Meeting of National Council on the Family Relations, Baltimore, MD.

Linsner, R., **Jin, L.**, Williams, S., & Mulvaney, M. K. (2014, May). Parental attitudes of sexual behaviors and risks predict college student sexual attitudes and risk-taking. Poster presentation at the 2014 Association for Psychological Science Annual Convention, San Francisco, CA.

RESEARCH EXPERIENCE

Human Development and Family Science, Syracuse University, 2021, March-April

Research Assistant to Dr. Ambika Krishnakumar

Project: CUSE Grant- Innovative & Interdisciplinary Research: Developing Machine Learning Classifiers on Uncovering Patterns of Intimate Partner Violence Risk

- Analyzed qualitative data: second cycle coding

Human Development and Family Science, Syracuse University, 2019

Research Assistant to Dr. Ambika Krishnakumar and Dr. Haste-Jackson

Project: Cross-Cultural Engagement of First Year Students

- Analyzed qualitative data and identified major themes
- Participated in report preparation

NYU-ECNU Institute for Social Development, New York University Shanghai 2017-2019

Research Assistant to Dr. Xuan Li

Project: Social relationships of Chinese emerging adults

- Gathered literature and other research materials regarding friendship among Chinese adolescents and emerging adults
- Prepared project materials (e.g., application form) for IRB approval
- Recruited interview participants and conducted semi-structured interviews
- Managed interview data, and attended research team meetings
- Analyzed transcribed data and identified major themes

Human Development and Family Science, Syracuse University, 2014

Research Assistant to Dr. Kamala Ramadoss

Project: Work-family issues in transnational families from the Indian sub-continent

- Recruited research participants and conducted 30 semi-structured interviews
- Organized and reviewed transcribed data
- Identified major themes from transcribed data

School of Education and Human Development, University of Colorado Denver, 2012

Research Assistant to Dr. Jung-In Kim

Project: Identifying sociocultural influences of parents, teachers, and society on children's identity construction and motivation to learn Korean heritage language.

- Organized and reviewed transcribed data
- Assisted in identifying major themes from transcribed data

TEACHING EXPERIENCE

Guest Lectures:

- April 26, 2018: Guest speaker, PSYC-SHU 349-Cultures of Psychology, Topic: Cultural Aspects of Diagnosis and Therapeutic Practices, New York University Shanghai
- November 29, 2017: Lecturer, student workshop on ‘What do we seek in an intimate relationship?’, New York University Shanghai
- November 13, 2014: Guest speaker, CFS 367-Child and Family in Cross-Cultural Perspectives, Topic: Chinese Families, Syracuse University
- April 1, 2014: Guest speaker, CFS 202-The Development of Child and Youth, Topic: Emotion, Temperament, and Personality Development, Syracuse University

Teaching Assistantships:

- Fall 2018: Teaching Assistant, CFS 204-Applied Research Methods and HSH 101-First Year Gateway, Syracuse University
- Spring-Fall 2015: Teaching Assistant, CFS 388-Human Sexuality and CFS 435-Lust, Love, and Relationship, Syracuse University
- Spring-Fall 2014: Teaching Assistant, CFS 201-Family Development, CFS 202 Development of Child and Youth, CFS 388- Human Sexuality, and CFS 367-Child and Family Cross-Cultural Perspective, Syracuse University
- Fall 2013: Teaching Assistant, CFS 201 Family Development, Syracuse University

Early Childhood Education Teaching Experience:

- Fall 2012-Spring 2013: Teaching Associate, preschool classroom, Bernice M. Wright Child Development Lab School, Syracuse NY.
- Fall 2011-Spring 2012: Teaching Associate and Substitute Teacher, Mandarin program, Colorado International School, Denver CO.

CLINICAL EXPERIENCE

ELG (Engage, Learn, Grow) Therapeutic Services, Shanghai, China, 2017-2018, 2019-Current

Psychological and Behavioral Team Leader/Educational Psychologist

Director: Miriam McBreen

- Provided 1:1 support meeting for team members
- Organized monthly team meeting
- Conducted intake interviews, observations, and screenings
- Performed Psycho-Educational assessments and follow-up support
- Consulted to families and schools about parenting in different cultures and strategies to support children with special needs
- Led approximately ten professional development training and seminars for colleagues and the wider community yearly

PROFESSIONAL TRAINING

Autism Certificate Training (ongoing), 2018-current

The International Board of Credentialing and Continuing Education Standards (IBCCES)

Structural Equation Modeling Workshop: Using the Fragile Families and Child Well-being Data, 2014

Department of Human Development and Family Science, Syracuse University

PROFESSIONAL SERVICE

Manuscript Reviewer, Journal of Family Psychology, 2018

Manuscript Reviewer, Crime & Delinquency, 2018

Reviewer, Book proposal for The Immigrant Family: Healing the Lost Bond, 2015

UNIVERSITY SERVICE

Graduate Student Representative, Falk College Diversity and Inclusion Committee, 2018

PROFESSIONAL SKILLS

Software: Proficient in SPSS, Mplus, Excel, and Word

Language: Proficient in English and Chinese

PROFESSIONAL MEMBERSHIPS

Society for Research in Child Development (SRCD)

Society for Cross-Cultural Research (SCCR)

Association for Psychological Science (APS)

American Educational Research Association (AERA), Division E

National Council on Family Relations (NCFR)