

Parenting Styles and Youth Outcomes in Contemporary China

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List of Abbreviations

aBIC: adjusted Bayesian information criterion
AIC: Akaike's information criterion
ALMR LR: adjusted Lo-Mendell-Rubin likelihood ratio
ATT: the average treatment effect on the treated
ATU: the average treatment effect on the untreated
BHPS: British Household Panel Survey
BIC: Bayesian information criterion
BLRT: bootstrap likelihood ratio test
CEPS: China Education Panel Survey
CFI: comparative fit index
CGSS: Chinese General Social Survey
CHC: Confucian heritage cultures
CPC: the Communist Party of China
EGP: Erikson-Goldthorpe-Portocarero classification
GMM: growth mixture model
HLM: hierarchical linear modelling
ICC: intraclass correlation coefficient
IQ: intelligence quotient
IRT: item response theory
ISCO88: 1988 International Standard Classification of Occupation
ISEI: international socioeconomic index
LCA: latent class analysis
LMR LR: Lo-Mendell-Rubin likelihood ratio
NSRC: National Survey Research Centre
OECD: Organisation for Economic Co-operation and Development
OLS: ordinary least squares
PISA: Program for International Student Assessment
PSM: propensity score matching
PTA: parent-teacher association
RMSEA: root mean square error of approximation
SAT: scholastic assessment test
SD: standard deviation
SES: socioeconomic status
USA: United States of America

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Abstract

This thesis presents three empirical studies that examine the association between parenting styles and a wide range of youth outcomes, with a particular focus on the social divisions of parenting styles. Study One attempts to introduce intensive parenting into the existing typology of parenting style. Applying latent class analysis, I construct a new typology of parenting styles – intensive, permissive, authoritarian, and neglectful – and find that intensive parenting as a particular mode in which the more privileged families in China use their superior resources to reinforce their advantages. I show that parenting style follows clear class lines, with manual workers more likely to adopt neglectful parenting in contrast with those in professional and managerial occupations who are more likely to adopt intensive parenting. Parenting styles also differ by education and parental political affiliation, with college-educated parents and parents who are affiliated with the Communist party being more likely to adopt intensive parenting in urban China. Results also show that there are strong associations between parenting styles and children’s academic, psychological, and behavioural outcomes. Study Two focuses on the effect of using the two forms of shadow education - private tutoring and hobby classes - on student academic performance. Using propensity score analysis to adjust for selection bias, my study shows that private tutoring can significantly improve student academic performance whereas hobby classes participation has very little effect on their academic performance. Higher family positions can significantly predict a higher likelihood of both private tutoring and hobby classes attendance. Study Three presents two avenues for understanding intergenerational transmission of class advantage – parenting styles and school quality. I found that most of the effects of family socioeconomic background on children’s cognitive skills operate through school quality, whereas most of the effects of family socioeconomic background on non-cognitive skills operate through parenting styles. These three empirical chapters are complementary to and reinforce each other, and they offer new insights into parenting styles in contemporary China: their determinants, manifestations, and consequences.

Declaration

No portion of the work referred to in the thesis has been submitted in support of an application for another degree or qualification of this or any other university or other institute of learning.

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Chapter 1 Introduction

1.1 Background: towards Intensive Parenting

In 1900, Swedish design reformer and social theorist Ellen Key predicted the twentieth century as “the century of the child” (Key, 1909) in which education, upbringing and well-being of the children would be crucial to both family life and society. In the following century and beyond, several developed countries (e.g. Australia, Canada, Italy, Netherland, Spain, the United Kingdom, and the United States) have seen the increasing time parents spent in bringing up their children (see Sayer, Bianchi and Robinson, 2004; Stearns, 2003; Wall, 2010; Craig, Powell and Smyth, 2014; Doepke and Zilibotti, 2019), and researchers (Putnam, 2015; Nelson, 2010; Aurini and Davies, 2005) have suggested that parenting in North America seems to become more nurturing, and even more intensified (see Aurini, Missaghian and Milian, 2020; Nelson, 2010). The main manifestation of this is that American parents have paid more and more attention to child rearing or nurturing rather than childbearing (Schaub, 2010; Lynd and Lynd, 1929). In the same vein some writers have shifted focus to childrearing in non-western countries (e.g., Park, Byun and Kim, 2011; Selin, 2014), and it has been argued that intensive parenting is becoming a ‘norm’ in post-reform China (Doepke and Zilibotti, 2019), with Chinese parents placing greater emphasis on emotional satisfaction and educational excellence (Gu, 2020) over basic childcare.

The dominant view has it that social norms about parental role have shifted from caregivers to “parents as teachers” in the United States because of schooling expansion. Evidence has shown that social disparities declined in the U.S. in post-war era (1945-1980) (Piketty and Saez, 2003). Under this circumstances, American parents of the baby boom saw no necessity to push their children hard, and instead, they were taught to take a relaxed attitude and enjoy their children

without parental intervention and parental influence (Putnam, 2015; Doepke and Zilibotti, 2019). But beginning in the 1980s, large expansion in educational attainment has brought about increasing proportions of the population going to and staying in school, which standardizes the life course for children, sorts children into various educational trajectories, and therefore, redefines the social role for parents (i.e., parenting for children's development is seen as a duty of parents) (Schaub, 2010; Craig, Powell, and Smyth, 2014). Mass education expands the social meaning of parenting and spreads the conviction that as all children are proper citizens of the nation in the future, they all deserve good nurturing and training (Schumann, 2010). Besides, tracking in the school system is also relevant to why parents are pouring more resources that aid achievements. Thus, one of the most important consequences of education expansion is that it profoundly changes the way in which people view parenting. Parenting is seen as a vital institution through which parents socialize their children (i.e., promoting social bonding and interdependence between parents and children, creating shared values, norms and expectations, serving as role models to children as to how to behave) and prepare them to develop into future citizens (Parcel and Menaghan, 1994; Cartwright-Hatton, 2010).

Indeed, school expansion is not the sole determinant of the trends towards intensive parenting. Another potential reason is due to economic inequality or economic uncertainty (Doepke and Zilibotti, 2019; Nelson, 2010). For example, starting in the 1980s, economic inequality in some developed countries (e.g., Netherlands, Sweden, United Kingdom, and the United States) has increased sharply (see Doepke and Zilibotti, 2019; Piketty and Saez, 2003). This is also accompanied by economic uncertainty, making parents increasingly anxious about their children, including securing safety, competitive advantage, and status production. Parents want their children to become winners so that they could move up the social mobility ladder in the highly competitive world and the consequences of 'failure' will take its toll on the individuals

when they grow up. In a recent study, Nelson (2010) delineated ‘parenting out of control’ in American families. As indicated by Nelson, professional middle-class parents nowadays are so anxious about children’s everything and especially their safety, college acceptance and status reproduction that they tend to monitor their children’s activities and become over-involved in their daily life (Nelson, 2010). In a word, several lines of evidence suggest that intensive parenting may have become a common form of parenting in the U.S. in the 21st century, especially for those in higher social positions.

During the last few decades, intensive parenting has held centre stage in China, and three discrete reasons emerge from this. First, China has steadily shifted from a highly centralized planned economy to a market-oriented economy since 1978, giving impetus to the restructure of its economic system. This economic reform also has a big impact on education, with the number of extracurricular tutoring institutions tremendously increased. However, these institutions often engage in exam-oriented training and take advantage of parental worries of their children falling behind peers, accelerating the intensive parenting and competitive education climate, especially in big cities. Second, China’s over population and the one-child policy have had considerable implications for the child-centred, time-intensive parenting. Although, in 2015, China announced the end of one-child policy that lasted for 35 years, several recent studies have shown that the fertility intentions for a second child in China are still very low (Jiang, Li and Sánchez-Barricarte, 2015; Wang *et al.*, 2019). This low fertility rate indicates that Chinese parents are now paying more attention to the ‘quality’ rather than ‘quantity’ of children, and with fewer children, parents can invest more both emotionally and financially to ensure that their children could be the best they can be and stand out from their peers and competitors. Third, while there has been a sharp expansion of higher education since the 1990s in China, a concern is raised over the stratification in educational opportunity in that

educational expansion didn't reduce the gap between the higher and the lower classes, and between the rural and the urban sectors in terms of higher educational attainment in China. In other words, the more advantaged social groups maintain and sharpen the edge over their less fortunate competitors in higher education attainment (Li, 2003a, 2014; Wu, 2013; Wu, Yan and Zhang, 2020). Given this, educational inequality is becoming more and more pronounced, yet it is also the case that little is known about the intergenerational transmission of educational advantage in China, or the extent to which parenting styles especially intensive parenting serve as a mechanism for the transmission of class advantage over generations.

1.2 Parenting and the Persistence of Inequality: Two Strands

Parenting change, especially the clear trend towards more intensive and engaged parenting that has occurred in the last few decades, has led to an explosion in sociological literature concerned with the consequences of parenting on children's school outcomes, life experiences and life chances. Among these studies, two broad streams have emerged. One line of research, from the perspective of social class, has been particularly prominent in documenting how social classes vary in parenting efforts. It has been argued that not all parents are engaged in intensive parenting, but only those who are more affluent and privileged can play a prominent role in shaping, monitoring, and investing in their children. Relying on ethnographic work in the U.S., Lareau (2003) showed that while all American parents love and show affection to their children, parents' social location systematically shape their daily routines of child-rearing practices in twelve different households. Working-class and poor parents focus more on sustaining children's natural growth and provide some basic support, such as ensuring safety, comfort, food, and shelter. In this child-rearing approach, working-class and poor children tend to experience long stretches of leisure time and rely more on kin relationships. By contrast, middle-class parents pay more attention to cultivating children's skills and talents, and

stimulating children's overall development, such as making certain that their children have organised activities, providing knowledge about interacting with educators, and eliciting their children's feelings, opinions, and thoughts. Lareau (2003) thus conceptualize these class-based parenting practices as "concerted cultivation" and "the accomplishment of natural growth", and summarized that middle-class parents engage in a process of concerted cultivation, whereas working-class parents and guardians facilitate the accomplishment of natural growth.

The other intellectual line, in the perspective of reproduction, has examined how disparities in parenting facilitate or constrain the intergenerational transmission of class advantage, with implications for the reproduction of social class inequality. French sociologist Pierre Bourdieu (1973) was among the first to point to the importance of family upbringing, and he suggests that by means of familiarization and inculcation in the family, the upper class can transmit dominant culture to their children and this academic hierarchy can help to perpetuate the social inequality. British sociologist Paul Willis further proposed that the family is an important bearer of class culture. The family culture is characterized by a set of parenting practices such as parent-child verbal interactions, language use at home, and parental guidance that reproduce and reinforce the social relationships of the school (Willis, 1977). Other scholars have shifted focus on class differences in child-rearing patterns and techniques in American society (Gillies, 2008; Lynd and Lynd, 1929; Kohn, 1963, 1969; Horton and Haydon-Mulligan, 2010). These authors find that good parenting transmits educational and non-cognitive advantages to children on later life path (see also Lareau, 2003; Roksa and Potter, 2011; Bodovski and Farkas, 2008). Parenting not only equips individuals with transmitted knowledge and values. It is also an avenue helping to finally direct individuals to certain kinds of work, to legitimate the position of privileged class, and to play a role in the observed patterns of social stratification that characterises our society.

To a certain extent, existing studies of sociology of education and especially Lareau's (2003) classic work on parenting and stratified family life in the U.S. can mirror what is happening and what will happen regarding child rearing in China, considering that, as mentioned earlier, income inequalities have become a major issue in both countries.¹ But given different cultural traditions and institutional arrangements, it is worthwhile to enrich previous literature by looking at parenting styles and especially what Lareau (2003) calls 'concerted cultivation' in a non-western context. One of the important reasons is that Chinese culture and tradition places an over-emphasis on children's academic excellence as the pathway to future career (officialdom, riches and fame as practiced in ancient Chinese society), which is very much different from that of the USA; and another important reason is that there has been a sharp expansion of higher education in China since 1999, and a large number of empirical studies have shown that China's higher education expansion has not brought about the originally intended equality of educational opportunities. Instead, social origins still have a big impact on educational attainment process (e.g., Li, 2003a, 2014; Li, 2006; Liu 2015a; Wu, 2013; Luo and Liu, 2020). However, up to date, less attention has been given to the micro-interactional processes whereby educational inequality occurs and how different social classes are reproduced within the educational system in the Chinese society and especially through which channels class advantages are transmitted to children and whether these contribute to the reproduction of existing social order. Therefore, this thesis shifts focus to the parenting practices or styles that different families conduct, or what Lareau calls 'concerted cultivation' in the Chinese society to explore whether parenting styles can be tested to play a role in shaping the child developmental outcomes.

¹ See <https://inequality.org/facts/global-inequality/> (Accessed: 3 January 2020). "The World Inequality Report data has shown that the share of national income going to the richest 1 percent has increased rapidly in North America (defined here as the United States and Canada) and China," but "more moderately in Europe."

1.3 Thesis Aims

Previous qualitative studies have shed light on how daily routines of parenting contribute to the transmission of inequality (Lareau, 2002, 2003) and much sociological discussion has centred on the relationship between parenting styles and adolescent developmental outcomes (Chan and Koo, 2011; Dornbusch *et al.*, 1987; Lamborn *et al.*, 1991). Yet, in spite of all this, much research still needs to be undertaken regarding parenting styles in China, and that for at least five reasons.

First, Chinese parents are highly renowned for intensive parenting and over-involvement in children's education (Chen, Huang, Lu & Zhang, 2020; Gu, 2020). However, previous studies have primarily focused on western countries and neglected the detailed patterns of intensive parenting practised in contemporary China. Based on China Education Panel Survey, the first empirical chapter attempts to introduce intensive parenting into the existing typology of parenting style. Up to date, few studies have investigated intensive parenting and its impact on child development in the Chinese society. That is because intensive parents do not fit Baumrind's predefined categories. Baumrind's conceptualization of parenting style perhaps is the most influential. She was studying three-year-old preschool children (60 white girls and 74 white boys) and 103 adolescents (Baumrind, 1971; Baumrind and Black, 1967), as well as their parents, and distinguished three distinct parenting styles: authoritative parenting (i.e., directing children's activities with reasoning and recognizing children's own desire but also setting standards and teaching discipline for proper conducts), authoritarian parenting (i.e., valuing obedience and adopting punitive measures to handle opposing viewpoints as well as discouraging verbal communication), permissive parenting (i.e., nonpunitive, warm, and loving, weak in actively altering or shaping children's ongoing behaviour). Based on Baumrind's framework, Maccoby and Martin (1983) propose two parenting dimensions:

demandingness and responsiveness. Thus, four parenting typologies emerged: authoritative parenting (demanding, responsive), authoritarian parenting (demanding, unresponsive), indulgent/permissive parenting (undemanding, responsive), and neglectful parenting (undemanding, unresponsive). However, a major criticism of Baumrind and subsequent researchers was their overly rigid two-dimensional model (Greenspan, 2006). The first empirical chapter aims to introduce a third dimension to identify intensive parenting in contemporary China.

Second, as mentioned above, it is worthwhile to test whether Lareau's qualitative findings about class differences in parenting styles can be replicated in a large, nationally representative sample in a rather different social-cultural context — China. Due to the lack of a “bigger picture”, general conclusions reached from small-scale qualitative studies on parenting styles' transmission of class advantage by Lareau (2003) can be theoretically inspiring but empirically ill-grounded. Using nationally representative data from the 2014 China Education Panel Survey (CEPS), Our first empirical chapter aims to analyze the relationship between social position and parenting styles in China. More specifically, we assess how parenting styles are related to parents' social class, education, and political affiliation. In doing so, we hope to gain a deeper insight into the socioeconomic drivers in parenting styles and the extent to which parenting styles differ between social groups. In Lareau's classic study of the impact of class on family life, she finds that middle-class parents are actively engaged in a purposeful, goal-oriented *concerted cultivation* style of parenting whereas working-class parents adopt a more laissez-faire, negligent *accomplishment of natural growth* style of parenting (Lareau, 2003). This raises the question of whether class links to parenting styles in a similar way between Chinese and western societies and whether Lareau's qualitative findings can be replicated using high-quality, nationally representative data in China. Our first empirical study, therefore, tests

the empirical correlates of parenting styles in terms of some structural factors that are popularly evaluated in Chinese research, which improves our understanding of class divisions of parenting styles in China.

Third, to what extent intensive parenting affects youth outcomes has been extensively debated in western societies (Schiffrin *et al.*, 2015; Yerkes *et al.*, 2021). My first empirical chapter seeks to explore the role of parenting styles in children's academic, psychological and behavioural outcomes. Specifically, we examine whether intensive parenting was the best form of parenting in the domains of academic achievement, psychological well-being, and delinquent behaviour in urban and rural China.

Fourth, although in recent years there has been a growing number of empirical studies on the effect of shadow education on a variety of child development outcomes, they do not tackle the problem of endogeneity seriously (e.g., Cheadle, 2008; Cheadle and Amato, 2011). It is possible that these results might be severely biased because of endogeneity and selection bias. The causality problem arises from the possibility that educational outcomes for children who participate in organised activities and what would have happened had they not participated cannot be observed for the same individual (i.e., what previous studies actually measure is to compare average educational outcomes for the “attendance” with that of the “non-attendance”), and the selection bias is caused by pre-existing differences in the use of shadow education. Our second empirical chapter aims to use propensity score analysis to adjust for selection bias and estimate the effect of using shadow education on academic achievements.

Finally, although previous studies have been accumulated on family socioeconomic background on children's cognitive and non-cognitive skills (Shenkin *et al.*, 2001; Borga *et al.*,

2021), they are weak in illustrating the mechanisms through which socially advantaged groups transmit their class advantage. Our third empirical chapter proposes two pathways – parenting styles and school quality and investigates how family background affects children’s cognitive and non-cognitive skills through these two mechanisms.

1.4 Thesis Structure

The thesis is centred on three main topics: (1). the typology of parenting style in contemporary China and whether these parenting styles differ across different social groups. (2). which parenting styles are most beneficial to youth development. (3). the relative importance of parenting styles and school quality for children’s cognitive and non-cognitive skills. The core problem is to identify the underlying construct of parenting for adolescents, which could, in turn, be utilized to further investigate its determinants and its associations with other developmental outcomes. Given this, the thesis is structured as follows,

Chapter 2 gives a brief review of parenting literature and draws together the typology of parenting as a concept, key theories, and empirical evidence, as well as the Chinese institutional context to explore the uniqueness of the patterns of parenting styles and changing social structure that Chinese youth and their parents are facing.

Chapter 3 presents the methods to be used in this thesis, which covers a brief overview of the data set, the description of the core variables and its measures, as well as the specific analytical strategies by which subsequent empirical analyses were conducted. The panel data set adopted for use is the China Educational Panel Survey (CEPS), which applies a stratified, multistage sampling design and provides detailed information on children’s family life, parent-child interaction, educational investment, and family background as well as information on the

child's school context, parent-teacher interactions, and community environment. The core variable in this research is parenting styles, a latent categorical variable identified through latent class analysis. The last section of this chapter presents other methods, including propensity score matching and random-intercept model to be used in the study.

Chapter 4 identifies the typologies of parenting styles in China, assesses whether there are class-based differences in parenting styles and examines the effect of parenting styles on children's academic, psychological and behavioural outcomes. Using three dimensions of parenting (i.e., demandingness, responsiveness, and involvement) in Chapter 3, this chapter identifies four parenting styles. The *authoritarian* parenting (17 percent) is characterized by high level of demandingness, low level of responsiveness and moderate level of involvement; the *permissive* parenting (38 percent) is, in contrast to *authoritarian* parenting, typified by a relatively high level of responsiveness, a low level of demandingness, and a moderate level of involvement; people who adopt *intensive* parenting (33 percent) is characterized by high demandingness, high responsiveness, and high involvement; a fourth parenting style, which I label *neglectful* (12 percent) is marked by low demandingness, low responsiveness, and low involvement. Moreover, a multinomial logistic model is conducted to investigate the relationship between social position and the choice of a specific parenting style. Last but not least, an OLS model with a robust standard error accounting for clustering is used to estimate the effects of parenting styles on children's academic, psychological and behavioural outcomes. The findings show that intensive parenting is most conducive to children's psychological and behavioural outcomes relative to the other three types.

Chapter 5 contextualizes the research within a distinctive kind of intensive parenting that has grown increasingly popular in contemporary China and focuses on a prominent feature of

Chinese parenting: engaging children in private tutoring and hobby classes for the purpose of gaining competitive advantages over their peers. This chapter explores the effect of private tutoring and using hobby classes on children's academic achievement. Using propensity score matching method, I find a positive effect of private tutoring on student academic achievement and a negligible role of using hobby classes on academic achievement. This chapter also investigates the determinants of private tutoring and hobby classes.

Chapter 6 highlights two mechanisms through which family socioeconomic status might exert influence on children's cognitive and non-cognitive abilities: (1) parenting styles and (2) differences in school quality. We start by estimating the overall degree of socioeconomic inequality in cognitive and non-cognitive skills. Then we use a statistical model of mediating variables to compare the relative importance of parenting styles and school quality. We find that most of the effect of family SES on cognitive skills operates through school quality, whereas most of the effect of family SES on non-cognitive skills operates through parenting styles.

The last chapter concludes the thesis. It summarises and brings together the main areas covered in the thesis. It also includes discussions on the significance and limitations of the findings as well as recommendations for future work.

Chapter 2 Review of Parenting Literature

2.1 The Typology of Parenting as a Concept

2.1.1 Three Important Concepts: Parenting Practices, Parenting Dimensions, and Parenting Styles

Parenting has long been a question of great interest in social science. Over the years, a body of educational and social psychological literature explores the various taxonomy and prototypes that differentiate among patterns of parenting, hoping to provide empirical descriptions of shared parenting characteristics or practices and its influence on a wide range of adolescent developmental outcomes (for an overview see Chan and Koo, 2011; Dornbusch *et al.*, 1987; Lamborn *et al.*, 1991; Maccoby and Martin, 1983). Several typologies, such as parenting dimensions (e.g., responsiveness and demandingness), parenting practices (e.g., parental involvement, parental monitoring, and parental aspirations, goals, and values) and parenting styles (e.g., different combinations based on dimensions of parenting), have been developed, and a central finding is that specific parenting practices and distinctive parenting styles do generate different results. Despite these promising results on typologies for parenting, we still find an important gap in this literature. For example, to date, there has been little discussion about drawing the distinction between parenting styles and parenting practices. Due to ambiguity in its conceptual definition, these two concepts are often used interchangeably and without precision (e.g., Bluestone and Tamis-LeMonda, 1999). However, equating parenting practices with parenting styles may be misleading because different operationalisations might lead to different measurements and in turn problematic results. Therefore, while there is linkage between parenting practices and parenting styles (i.e., parenting styles are believed to capture the attributes of parenting practices), it is necessary to distinguish one concept from another and to identify the relationship between them.

Given this, a group of researchers have sought to build bridges between parenting practices and parenting styles by introducing parenting dimensions. The most widely accepted narrative is responsiveness and demandingness in the work of Maccoby and Martin (1983). Prior to this, researchers have proposed several parental dimensions including acceptance/rejection and dominance/submission (Symonds, 1939); or emotional warmth/hostility and detachment/involvement (Baldwin, 1955). These dimensions of parenting can be characterized by a set of parenting practices or behaviours and grouped conceptually into broader categories exemplifying the distinctive patterns (i.e., parenting styles). It can thus be suggested that parenting practices refer to a series of parenting actions through which parents perform their parental duties (Darling and Steinberg, 1993; Spera, 2005), which is an umbrella term encompassing specific parental behaviour, parental values, and goals. Examples of parenting practices include paying attention to discussions with children, helping children with homework, reading books together, disciplining children, encouraging children to pursue higher education etc. Parenting styles, however, can be loosely described as composite parenting prototypes that characterize each group member and create the atmosphere that starts the process of socialization (Baumrind, 2005; Darling and Steinberg, 1993). One of the widely-used techniques for identifying parenting styles is the four combination – authoritative, authoritarian, permissive, and reject-neglecting – of two parenting dimensions (orthogonal factors) of demandingness and responsiveness, both of which include a group of specific parenting practices (Baumrind, 1967, 1971).

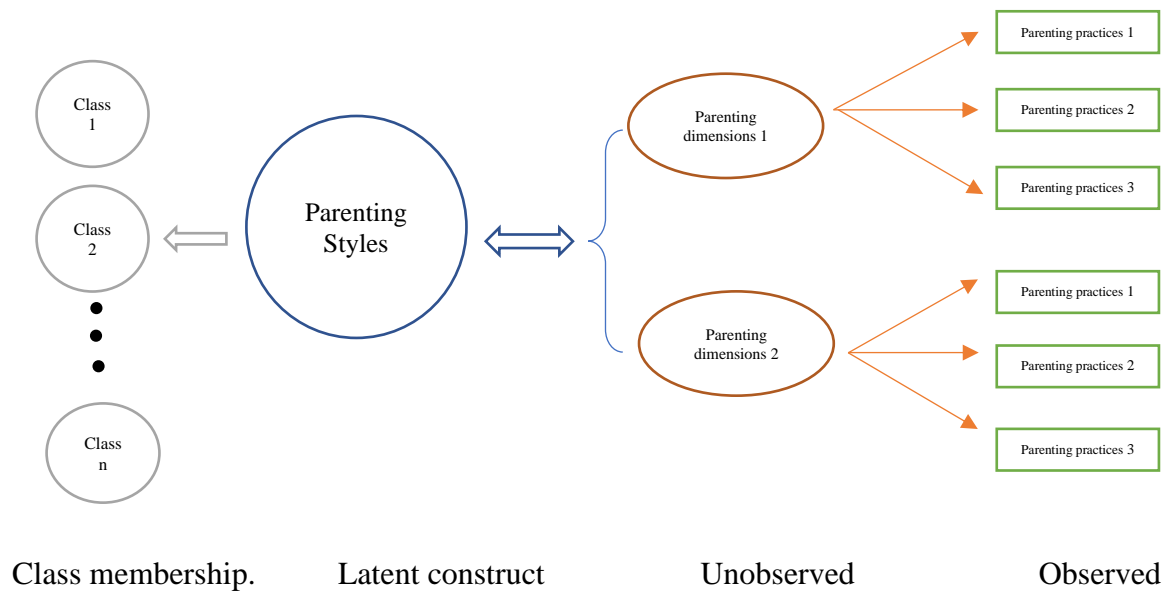


Figure 2.1 Distinguishing parenting styles, dimensions, and practices

Table 2.1 Operationalizing a typology of parenting styles by Baumrind’s approach (1971)

		Responsiveness Dimension	
		Low	High
Demandingness Dimension	Low	Rejecting-neglecting	Permissive
	High	Authoritarian	Authoritative

2.1.2 Conceptualizing Parenting Styles and Its Constructs

The first detailed study on parenting style was Baumrind’s (1971) seminal work, which proposes three parental configuration that are “authoritative”, “authoritarian”, “permissive”, and later Baumrind (1991a, 1991b) identified a fourth parenting style “rejecting-neglecting” based on two dimensions – parental demandingness and responsiveness proposed by Maccoby and Martin (1983). Baumrind’s primary research methods were structured interviews and observation. According to Baumrind, parents who are both demanding and responsive are classified as “authoritative”, while parents who are demanding but are lacking in responsiveness are classified as “authoritarian”; parents who emphasize more responsiveness than demandingness are classified as “permissive”, and parents who are neither demanding nor responsive are classified as “rejecting-neglecting”. As suggested by Baumrind (1991a, 1991b),

the obvious difference between authoritative and authoritarian parenting is that, although they both emphasize on disciplinary parental action, authoritative parents are not obedience-oriented and punitive, and what they often do is to set clear standards for children's conduct and encourage meaningful interaction. By contrast, authoritarian parents promote conformity, exhibit more punitive behaviours, and rely less on verbal exchange. Furthermore, the obvious difference between permissive and uninvolved parenting is that while both do not actively participate in children's daily lives, permissive parents are indulgent and tend to accede to the child's demands, whereas uninvolved parents are self-centred and indifferent to children (Lamborn *et al.*, 1991).

Centred around Baumrind's conceptualization, much of the literature has investigated the consequences of parenting styles on adolescent developmental outcomes and its ethnical differences. Research has shown that compared to other types of parenting styles, authoritative parenting is most advantageous to children's psychosocial competence and school performance, whereas authoritarian parenting tend to be associated with poor school performance among white Americans (Baumrind, 1991b; Berge *et al.*, 2016; Glasgow *et al.*, 1997; Jackson *et al.*, 1998; ; Lamborn *et al.*, 1991; Dornbusch *et al.*, 1987). Despite this, studies have shown that authoritative parenting does not seem to be so well applied to ethnic minority groups such as Asian American children (Dornbusch *et al.*, 1987; Steinberg *et al.*, 1992). Authoritarian parenting can significantly predict school grades among Asian Americans (Dornbusch *et al.*, 1987). Also, another study based on samples of Brazilian adolescents have argued that authoritative parenting may not be the most conducive to children in Brazil, because children of permissive parents report higher level of self-esteem compared with other types of parenting styles (Martínez *et al.*, 2007). Therefore, it has been suggested that parenting styles are embedded in social milieu (Darling and Steinberg, 1993), which to some extent governs

peoples' behaviour and give parents and children guidelines about what things mean and what is important. For instance, Chao (1994) puts forward the idea that children of Asian heritages do not interpret authoritarian parents as exhibiting hostility, mistrust and dominance compared with their European American peers, and that this is the reason why they tend to suffer from lower levels of maladjustment in the authoritarian households.

Parenting styles can directly influence children's social and behavioural outcomes. Socialisation and learning theory emphasise the essential and unique role of parenting in children's prosocial behaviour development. Children tend to emulate and internalise the prosocial behaviour displayed by their parents (Streit *et al.*, 2021). It is thought that this parent-child interaction promotes social bonding and interdependence between parents and children, thus creating shared values and helping children develop into solid, law-abiding citizens (Parcel and Menaghan, 1994). Put simply, if parents tend to shout, threaten, or take punitive steps against children, children will learn the way to behave towards others' undesirable behaviour (such as becoming bad-tempered). In contrast, parents' repeated positive behaviour patterns will reinforce the coercive value and become internalised by the child, who will take this new-learned behaviour pattern to the outside world, becoming the way he/she interacts with teachers and peers and others. Thus, parenting during childhood sets the stage for shaping children's orientations, attitudes, and behaviours in later life. Warm, responsive parenting plays an important role in establishing early foundations for social, communication, and independent problem-solving skills (Landry *et al.*, 2006), whereas harsh, demanding parenting has a strong effect on child aggression and conduct problems (Chang *et al.*, 2003).

Subsequent researchers have documented a positive association between parenting styles and social and behavioural outcomes. For example, in order to test Maccoby and Martin's

framework, Lamborn *et al.* (1991) investigated approximately 10,000 ninth- through twelfth-grade students in Wisconsin and California. On the basis of adolescents' ratings of their parents on two dimensions: acceptance/involvement (comparable to responsiveness suggested by Maccoby and Martin) and strictness/supervision (comparable to demandingness), they identified a fourfold parenting typology by trichotomizing these two dimensions: authoritative parents were in the highest tertile on both two dimensions, whereas neglectful parents were those who scored in the lowest tertile on both variables. Authoritarian parents were those who scored in the highest tertile on strictness, but in the lowest tertile on acceptance. Indulgent parents are the opposite of authoritarian parents with the lowest tertile on strictness but the highest tertile on acceptance. Lamborn *et al.* (1991) found that adolescents from authoritative homes scored higher on psychosocial development, and lower on problem behaviour than those from neglectful, indulgent, or authoritarian homes. The reverse is true for adolescents from neglectful homes.

Although the research of Lamborn *et al.* (1991) offers a fresh perspective on the index of parenting styles and their role in child psychosocial, behavioural, and academic outcomes, Chan and Koo (2011) argued that the tertile-split procedure to measure parenting styles is quite arbitrary and disregarding respondents in the middle tertile is wasteful of information. Therefore, utilising data from the Youth Panel of the British Household Panel Survey (BHPS), Chan and Koo focused on 15-year-olds interviewed between 1994 and 2001. They used latent class analysis based on six questions that tap two dimensions suggested by Lamborn *et al.*: strictness/supervision and acceptance/involvement, and yielded the three-fold typology, namely authoritarian, authoritative, and permissive parenting. They showed that youth with authoritative parenting have higher self-esteem and well-being and lower risky behaviour than youth with authoritarian and permissive parenting in the UK.

Previous studies on whether social classes affect which type of parenting styles parents might adopt have provided inconsistent results. Some studies, for example, have linked the prevalence and effectiveness of authoritative parenting to middle-class, white American families (Darling and Steinberg, 1993; Smetana, 1995). Kohn (1963, 1969) argued that blue-collar workers are more likely to favour authoritarian childrearing because their jobs require obedience and conformity, while other studies, however, based on samples outside the United States have produced a rather different picture. For example, based on Youth Panel of British Household Panel Survey, Chan and his colleague have found there is no significant class-based difference between parents' social classes and parenting styles in the United Kingdom (Chan and Koo, 2011). Investigating 2150 Chinese secondary school students, Shek (1995) found that parental gender is an important factor in explaining different parenting styles with Chinese fathers being more authoritarian, and the author also found that parenting styles do not differ across different socioeconomic groups in China.

2.1.3 The Scope of Parenting Practices

Studies diverge as to what constitutes parenting practices, and especially how to define the scope of parenting practices. Kohn (1959,1963) was among the first to identify the importance of parenting values and he indicated that class shapes the logic and values of childrearing, which are in turn passed on to children and thus help children learn the way to behave and prepare them for stratified positions as they move into the outside world. Spera (2005) gave a systematic review of several important constructs of parenting practices related to adolescent school outcomes. The review of empirical research indicates that there is a strong association between parental involvement and monitoring and adolescent school achievement. For Juang and Silbereisen (2002), parenting practices include parental academic expectation, parental warmth, discussion with parents, and parental involvement in school. Lareau (2003) coined the

term “concerted cultivation” to explain social class-based differences in parenting practices and logic characterized by language use, enrolling children in organized activities (e.g. piano lessons), parent-child interaction, and interventions in institutions (e.g. parents on behalf of children have close contacts with teachers in school), and noted the importance of the effective parent-institutional interaction, through which middle-class parents succeed in drawing educators’ attention to their own children, and monitor their children’s institutional experiences such as their children’s progress even if they are outside classroom. Lareau’s approach shed light on the measurement of parenting practices, following which Tian (2019) summarized four elements that have been major components of parenting practices, including parenting values, parent-child relationship marked by warmth or alienation, parent-initiated interaction with school, and participation in children’s extracurricular activities. Such conceptual differences lead to inconsistent empirical findings and poses a problem for replication or extension of previous studies on parenting practices.

These constructs based on the concept of parenting practices are remarkable and they share some common features. Yet, researchers have not satisfactorily explained whether different indicators that have been used pertain to one concept or to several, or whether these approaches to measurement are valid and accurate enough in measuring parenting practices, and especially if there are any indicators that should have been used but are, in fact, not included. One reason behind these problems with many studies is that there is a lack of precise conceptual definition and the most common typology used to measure parenting practices is based on intuitive observation. To address this issue, we must start with operationalizing parenting practices. We believe that, broadly speaking, parenting practices refer to a series of stratified parenting behaviour and parenting logics through which parents interact with and socialize their children. Differences in parenting practices are not only located in certain hierarchical positions (birth

status) in which parents themselves were raised, but also rooted in specific culture milieu that gives parents guidelines about what is expected, how to interpret children’s behaviours, and what should or should not be done. We propose the stratified framework that contains both parenting practices that occur within the context of family and those that exist in broader communities to operationalize parenting practices. Family factors such as getting involved in children’s homework and nonfamily factors such as parents serving on school boards, do not operate in isolation, but instead one can reinforce the other through complementary parenting actions. The main reason for this categorization is that we aim to capture the social stratification of family life by revealing daily routines of parenting that involve interactions within and outside home. Parenting practices within the family incorporate parental aspiration, parental involvement in schoolwork, home communication and discussion, parental monitoring and parental discipline; parenting practices outside the family incorporate organised leisure activities and parental intervention in schools, both of which are different forms of parenting practices that can have a significant impact on children’s developmental outcomes.

Table 2.2 Typology of differences in parenting practices according to Lareau’s approach (2003)

	Child-Rearing Approach	
	Concerted Cultivation	Accomplishment of Natural Growth
Key Elements	Parent actively fosters and assesses child’s talents, opinions, and skills	Parent cares for child and allows child to grow
Organisation of Daily Life	Multiple child leisure activities orchestrated by adults	“Hanging out,” particularly with kin, by child
Language Use	Reasoning Extended negotiations between parents and child	General acceptance by child of directives
Interventions in Institutions	Interacting actively with teachers	Relying on children themselves when they encountered problems at school

At the family level, parenting practices are not simply the behaviours characterised by regularities but rather relations through which parents socialize their children based on their own social circumstances. We propose that at least five components (i.e., parental values, goals and aspiration, educational involvement, verbal communication, parental monitoring, and

parental discipline), interconnected to each other, can capture the characteristics of parenting practices within or outside the family and the interaction in which both parents and children are involved. A review of research on each of these components is presented in turn as follows.

Parenting values, goals, and aspiration. Parenting values, goals and aspiration play a central part in the explanation that parents socialize or help to develop their children. The subtle process through which parental orientations and values influence children's achievements has been well documented and can be divided into two strands of literature. The first perspective was examined in sociological studies of how social milieu is linked with parental values, and class-based value orientations in autonomy and conformity in children. Kohn defines parental values as 'those standards that parents would most like to see embodied in their children's behaviour' (Kohn, 2006, p.18), and he found that social classes vary in value orientations with regards to conformity. More specifically, middle-class parents place a higher value on self-direction, whereas working-class parents adhere more to values of conformity and obedience to external proscription (Kohn, 1959, 1976, 1977). Also, because of different occupational conditions, working-class mothers tend to use physical punishment (Kohn, 1977, p.95), whereas self-control seems more necessary and important to middle-class parents (Pearlin and Kohn, 1966). This relationship of social class to parental values is consistent in several countries (i.e., Italy, Japan, Poland, the United Kingdom, and the United States) despite distinct cultural dispositions (Pearlin and Kohn, 1966; Kohn *et al.*, 1990; Baker and Barg, 2019). However, these studies are weak in explaining 'how parents go about translating these beliefs into actions' (Lareau, 2002). Lareau (2003) argues that working-class and middle-class parents differ in parenting logics. Put differently, middle-class parents are concerned with engaging in a process of 'concerted cultivation', whereas working-class parents are concerned with

accomplishment of natural growth, which leads to transmission of social inequality across generations.

The second perspective stemmed from the recursive model of Blau and Duncan (1967) but was adopted mainly in Wisconsin model that focuses on the mediating effect of parental aspirations or expectations on educational and occupational attainment. Based on a large sample of Wisconsin high school seniors, they argued that social-psychological properties of family milieu such as parental expectations, can be instilled in children who gradually internalize and foster their own motivation and aspirations that contribute to the reproduction of social structure. By adding these mediating social psychological factors (e.g., value orientations, parental expectations, significant others) to Duncan's basic model, they attempted to illustrate how class advantage is transmitted by means of parental aspirations or expectations (Sewell *et al.*, 1969, 1970; Sewell and Shah, 1967, 1968a, 1968b). The logic behind the Wisconsin model is rather simple and clear: parents of higher social class are more likely to have higher aspirations for their children who, in turn, are motivated and encouraged to achieve higher-level aspiration and better academic achievements, which is more advantageous to children seeking first jobs with higher socioeconomic status. The level of parental aspiration or motivation related to family position in the hierarchical structure thereby becomes one of the powerful mechanisms that perpetuates and reproduces educational and occupational advantage (Mortimer *et al.*, 2017; Hanson, 1994; Spenner and Featherman, 1978; Sewell and Hauser, 1980; Sewell and Hauser, 1972; Eccles *et al.*, 2004; Ashby and Schoon, 2010; Jacob and Linkow, 2011).

Although empirical findings have been accumulated regarding the mediating role of parental aspirations and expectations, two issues deserve further scrutiny. First, the Wisconsin model

seems to assume that expectations adhere to children by birth status without paying full attention to the selection process in education systems, which depends heavily on children's overall academic performances in the 'real world'. Expectations for the future get adjusted to the perceived constraints and external feedbacks, in which case it is not that underclass children have lower expectations, but that they choose to lower the expectations to avoid inner conflicts (see Hanson, 1994; Kerckhoff, 1976; Bourdieu, 1973). Youth in more disadvantaged social positions may lower their expectations over time even though these expectations may start out high (Hanson, 1994). Evidence also suggests that respondents become less ambitious as they get older (Simmons and Rosenberg, 1971; Kerckhoff, 1977). Second, Wisconsin analysis does not take account of institutional contexts in which parental aspirations are rooted, nor do researchers in this school examine how parental aspirations differ according to institutional arrangements. There is considerable evidence that expectations and ambitions interact with structural and institutional factors, such as the national educational system and cultural traditions. For instance, the relationship between psychological factors such as parental aspiration and children's schooling outcomes may be contingent upon specific characteristics of educational systems. Research has shown that British educational system in which children are tracked into different educational trajectories from the beginning might attenuate the effects of parental aspiration or significant others, because schools are like filters that closes the door for children and make it difficult to change trajectories, once they are sorted into different categories, and in such case, parental aspirations become less influential and even irrelevant. By contrast, expectations have more influence over children in the United States in which school systems are open to all students who are encouraged to compete for higher education (Buchmann and Dalton, 2002). Also, British teenagers' educational expectations are more realistic at an early age (under a sponsored mobility system) than their American counterparts

(under a contest mobility system)² (Kerckhoff, 1977). And, it has been suggested that, in general, Chinese children have high levels of educational aspirations because of cultural tradition (i.e., favouring academic excellence is rooted in Confucianism) (Archer and Francis, 2006; Yi, 2013).

Parental Involvement in Schoolwork. Parental involvement is defined as “parental participation in the educational processes and experiences of their children” (Jeynes, 2005, p. 245). It has been suggested that parenting involvement is an umbrella term that encompasses parents-led parenting involvement practices and school-led parenting involvements practices that are initiated by schools (Spera, 2005). In this thesis, I mainly focus on parental involvement in schoolwork, because I argue that this form of parenting involvement is a central way through which parents are directly involved in schooling by supporting or influencing children’s learning process and objectively conveying the importance of education to children. Parental involvement in schoolwork is a highly rewarding process and can help parents ‘keep in touch’ with teacher’s guidance and cultivate an active home-learning environment. Lareau (1987) proposed that middle class parents and working-class parents respond to school request for parental participation differently. Based on interviews and observations, she found that working-class parents tend to rely on teachers to educate their children because of a lack of educational skills, whereas middle-class parents feel more comfortable helping children with schoolwork at home.

There are studies available which show that parental involvement plays an important role in improving children’s academic achievements and schooling outcomes (Christenson *et al.*, 1992;

² Sponsored mobility refers to a system of social mobility where “elite recruits are chosen by the established elite or their agents, and elite status is given on the basis of some criterion of supposed merit and cannot be taken by any amount of effort or strategy”. On the contrary, contest mobility refers to a system of social mobility in which everyone is seen as having equal opportunity to attain high status (Turner, 1960, p.856)

Useem, 1992). There are also studies which question the causality by showing negative or null relationships between parental involvement and children's educational outcomes (Fan, 2001; Muller, 1998). A fundamental claim of the parental involvement literature is that the estimation of parental involvement may be biased because of reciprocal causation problem, namely, it could be children's poor/good academic outcomes that bring about parental involvement in schoolwork such as parental supervision on children's homework, or it could be parenting involvement in schoolwork that leads to poor/good schooling outcomes. Both possibilities exist and any definitive solution remains unclear. For example, if children perform well at school or children are independent learners, maybe there is no need for parents to help with homework, whereas children's failure at school or struggle in homework may lead to parents spending more time with children working on homework or school projects together. Given this, some of the recent studies use creative methods to deal with the possible reciprocal causal relationship by attempting to estimate the real effect of parental involvement in schoolwork. For example, using national longitudinal data, Domina (2005) estimates time-lagged growth models of the effect of parental involvement activities in 1996 on individual test scores in 2000 by controlling for prior test performances. He finds a significant but negative impact of parental involvement in homework (measured by frequencies that parents check and help with homework) in the full ordinary least square (OLS) model.

Numerous studies using qualitative analysis have attempted to explain why parental involvement in schoolwork might generate detrimental results. Parental involvement in schoolwork is a complex process that can be mediated by other family factors, such as children's characteristics and parent-child relationship. For example, researchers argue that effective homework support depends on good parental communication skills, because parents may be anxious about children's future in the homework support process, which causes not

only a lot of pressure for children, and especially for children who are academically disadvantaged, but also tensions for parent-child relationships (Solomon *et al.*, 2002). Other studies suggest that parents' negative emotions in students' homework may discourage children as learners (Hoover-Dempsey *et al.*, 1995). However, less attention has been given to the emotional climate during which parents help with schoolwork, which is less obvious to measure.

Home Discussion. Class-based differences in home discussion and verbal interaction are well established and have been shown as powerfully influential. Lareau provided rich empirical evidence of home discussion and language use in middle-class and working-class American households. She believed that verbal discussion in the home plays an important role in the transmission of class advantages and sets stage for middle-class children to build verbal ability to interact with adults, and especially those in positions of power or those in organizational settings (Lareau, 2003). The emphasis of benefits of home talking not only include greater verbal agility, larger vocabularies, more comfort with authority figures, and more familiarity with abstract concepts observed by Lareau, but also the extensive use of verbal negotiation, which is an important endeavour middle-class parents make to cultivate children's talents, skills, as well as opinions (Lareau, 2003). According to Lareau, middle-class children tend to learn to use their verbal skills and reasoning to bargain with their parents at home, and these skills might be useful in institutional encounters in the future; whereas working-class children tend to follow parents' directives silently and rarely practise negotiating with adults who often use threats of physical punishment. The amount of talking in working-class homes is considerably less than in the middle-class homes, and sentences tend to be shorter, words simpler, and negotiations infrequent, as observed by Lareau (2003). Working-class children have little opportunity to practice negotiating with adults and little call to learn to summarize and present their own ideas, opinions, and excuses. The habit of not questioning adults also

means that children in these homes are less likely to learn new vocabulary (Lareau, 2003). In a word, Lareau suggested that the key class differences in language use are that middle-class parents see language and home discussion as a tool for cultivating reasoning skills or a resource to plumb for ways to express feelings or ideas, whereas for working-class parents, language mainly serves as a practical conduit of daily life (Lareau, 2003).

Parental Monitoring There is growing awareness that parental monitoring, which is the key component of parental critical role, has a big impact on child development. As part of this awareness, research interest in parents' knowledge of youth daily activities and strategies to make children willingly provide information has risen. Traditionally, parental monitoring has been defined as 'a set of correlated parenting behaviour involving attention to and tracking of the child's whereabouts, activities, and adaptations' (Dishion and McMahon, 1998, p.61). Results from some studies have suggested that close monitoring of school life is beneficial for children, which can not only help children acquire skills for effective interactions with institutions later in their lives (Lareau, 2003), but also prevent children's antisocial behaviour (Stattin and Kerr, 2000), as well as substance use and abuse (Fletcher, Darling and Steinberg, 1995). In seeming opposition to these findings, some researchers are concerned about delayed independence, autonomy, and parental dependency due to parental hovering and monitoring (Hofer *et al.*, 2009). This 'parenting out of control' that hovers over children more closely than ever before and even when they head off to college is thought to be no good to children's growth and result in a low level of self-esteem, and a low sense of responsibility and autonomy.

Qualitative studies have documented the class-based differences in parental monitoring: the higher the social status, the more likely to use strategies to monitor children. For example, Lareau concluded that middle-class parents play an active role in a pattern of concerted cultivation with a close monitoring of their children's institutional experiences. They tend to

monitor children's homework, gather information, and intervene in their children's academic careers, whereas working-class and poor parents spend less time monitoring children's activities (Lareau, 2003), and they were less capable and less efficacious to intervene in their children's institutional life (Lareau, 2003). Nelson (2010) draws a distinction between 'parenting out of control' in professional middle-class families and 'parenting within limits in middle- and working-class families according to education and professional occupation. She found professional middle-class parents tend to carefully guide and determine the contours of children's action based on subtle strategies, the central of which is intimacy and hovering combined with elastic constraint and covert surveillance. For example, instead of using technological assistance (e.g., installing a piece of software) to block unwanted Internet site which is often adopted by less privileged parents (i.e., middle- and working-class parents), professional middle-class might watch videos together with children 'to ensure that images of violence are subject to detailed discussion' (Nelson, 2010, p.11).

Parental Discipline While parental monitoring and parental discipline are often complementary and overlapping in the previous literature, they are different in a number of respects. First, parental monitoring is about keeping track of children's actions and activities, and shaping or determining children's behaviours and choices, whereas parental discipline is about using rules or punishments to restrict, educate and train children to avoid unwanted behaviour.³ Second, although they share the same end, which is to control children, it is necessary to clarify its different emphases: independence versus obedience comes into the domain of parental monitoring, whereas parental discipline deals with lenient versus strict child-rearing approach. Third, high levels of parental monitoring may not predict high levels

³ For example, if their children are not at home at a certain time, parental monitoring means parents use GPS tracking devices to know where their children are and may give them a phone call to get information that parents need to know; but parental discipline means parents set rule about the curfew and explain what the consequences will be if they violate the curfew limits and punish them if they do stay out overnight.

of parental discipline, at least in American households. This is because according to Lareau, although middle-class parents closely monitor their children, they are relaxed towards parental discipline and lay stress on reasoning and negotiation in the home, and middle-class children also learn how to make the rules work in their favour (Lareau, 2003). By contrast, working-class and poor parents rarely monitor their children's activities and actions, but they tend to use clear directives with limited negotiation and even threats of physical punishment. One consequence of this is that working-class and poor children rarely talk back to adults and gain less experience in negotiating with adults, skills that might be useful in institutional encounters in their future (Lareau, 2003).

Recent research on the determinants of parental discipline focuses on the cultural milieu in which parenting behaviour is embedded and sparked by Amy Chua's (2011) book about tiger mom, researchers believe that Asian-heritage parents are more likely to raise children in a harsh, demanding, and restrictive way. However, since this strict, rule-oriented parenting is contrary to what we call the "supportive" parenting, i.e., habitual displays of high levels of encouragement and warmth, and less parental control and punishment, a much-debated question is whether parental discipline will generate negative effects. Some studies, for example, based on samples of European American children, found that children may feel less motivated and unsupported under a highly demanding and restricting environment, which is related to high frequency of maladjustment, lower academic achievement, and negative well-being (Dornbusch *et al.*, 1987; Steinberg *et al.*, 1992). Other studies, however, suggest that Chinese American and other Asian immigrant families do not interpret demanding or strict rules as hostility, mistrust, and dominance because of different cultural tradition (Chao, 1994), thus their children achieve better academic results and do not engage in oppositional behaviour or anxiety symptoms than their European American counterparts (Wu, 2012).

One of Lareau's major insights on concerted cultivation is that parents play a critical role in transmitting class-based inequalities into unequal experience and opportunities in school. From early evidence about parental attendance at school activities that is positively linked with children's school outcomes to more recent studies on how social class influences children on their leisure time outside of school, researchers present how parenting practices can have an impact on children outside their household.

Organized Leisure Activities A large number of ethnographic studies have documented a class-rooted difference in organized activities – extracurricular activities, after-school classes, summer camp and youth clubs - whereby privileged parents secure advantages for their children. For example, middle-class parents place emphasis on cultivation and obligation to develop children's talents through the organization of their leisure time, enrolling them in numerous activities; whereas working-class and poor parents do not consider these activities as an essential aspect of good parenting, and their children tend to experience long stretches of leisure time and have far fewer organized activities than their middle-class counterparts. According to Lareau (2003), even if some working-class and poor children have the desire to participate, time budgeting, lack of transportation and economic strain can pose challenges for them to get involved (Lareau, 2003). Chin and his colleague compare the relative importance of parental awareness to cultivate their children's talents and material resources in influencing organized activities participation and find that class-based differences mainly stem from material circumstances in the social hierarchy rather than parental values (Chin and Phillips, 2004), and middle-class parents have more resources and are more successful in constructing highly stimulating summers for their children, whereas working-class children have the least-varied, least-stimulating summer experiences (Chin and Phillips, 2004).

Parental Interventions in school. Another way for parents transmitting their advantage to children is to get involved in children's life in school contexts. Several studies have identified the role of parent-institutional intervention or interaction in contributing to social reproduction and have distinguished between parent-institutional intervention initiated by parents (e.g., parents serving on school board, participation in parent-teacher association, having consistent conversations with teachers) and parental intervention initiated by school (e.g., parent-teacher conferences).

However, a key question is why differential family life between parents and children can lead to inequalities that occur at school. Much of the literature has shown that parent-institutional intervention exacerbates inequities in two systematic ways. The first avenue is the subtle transmission of parental strategies about how to interact with educators in institutional settings. According to Lareau (2003) and Calarco (2018), middle-class parents are strong role models for their children, from whom they acquire vocabulary, skills and strategies for effective interactions and negotiation with teachers at school and thus are more likely to reap the benefits and get assistance from teachers when children are confronted with difficult situations. By contrast, working-class and poor parents sometimes do not realize the importance of the interaction in school and tend to teach children strategies of deference towards teachers. Working-class and poor children are less likely to customize interactions with teachers and seek support from teachers when encountered problems at school. Another avenue is the obvious transmission of parental time, energy and money pouring into children's school (e.g., school board, parent-led organisation etc.) which build trust, shared-values and social connection among parents, teachers and children. Empirical research has found that more privileged parents pay attention to develop children's wide range of social bonds or broader social connection compared to less privileged parents who may primarily focus on close friendship and tend to be deprived of useful information (Gillies, 2008), and students who

attend school with parent-teacher association have better academic performance than those who attend school without the association (Murray *et al.*, 2019).

A main characteristic of Chinese parenting is that parents seek to build and maintain interpersonal relationships with teachers at school. For example, Xie and Postiglione (2016) conducted a study on rural children from different social backgrounds in a county in the central part of China. They found that while all parents were aware of the importance of parental intervention in school, there were still class-based differences in the daily routines of parenting. For example, cadres and professionals taught children how to interact with teachers and classmates appropriately and established interpersonal connections with teachers by giving gifts and holding banquets for teacher. In contrast, peasants tended to be physically absent from home, generally conversed less with their children, and were substantially disadvantaged in establishing linkages between families and school.

2.2 Theoretical Framework for Parenting

2.2.1 Cultural Reproduction, Cultural Mobility and Cultural Production

Cultural Reproduction. Almost half a century ago, French sociologist Pierre Bourdieu formulated the cultural reproduction theory, theorizing how ruling classes reinforce their advantage, and centred on cultural capital and educational system (Bourdieu, 1973, 1986; Bourdieu and Passeron, 1977). In his classic critique of social reproduction, Bourdieu introduces the theory of cultural-level monopoly and cultural arbitrary, and argues that ruling-class parents are well-endowed with the code of dominant culture, which provides dispositions and cultural competence that can be explicitly or implicitly passed on from one generation to the next within the cultured family, and this monopolization of high culture thereby acts as a mediation between original structure and the reproduction of social inequality (Bourdieu, 1973). During the success of this transmission, Bourdieu and his colleague believe that educational

system plays a decisive role in legitimating the established social order mainly by a series of pedagogic action that seeks to ‘reproduce the cultural arbitrary of the dominant class’ (Bourdieu and Passeron, 1977, p.5). According to the authors, not only can cultural arbitrary be exerted through pedagogic communication and language, which is different from the formal definition of communication and important in the process of inculcation and acquirement, but also under the guise of academic selection, examinations and the school system convert social hierarchies to the academic hierarchies, manifested in the diplomas and qualifications of education, which is more disguised than the direct transmission of economic capital, thus contributing to the intergenerational transmission of class advantage in a less visible way (Bourdieu, 1973; Bourdieu and Passeron, 1977).

The starting point of Bourdieu’s cultural reproduction theory is cultural capital, which is coined to theorize the link between children’s social origin and unequal scholastic achievement. According to Bourdieu, cultural capital is invested by the family and domestically convertible (Bourdieu, 1986). That is to say, it can be converted into a subtle and deeply-ingrained habitus which on the one hand adheres to social structure, and on the other hand produces meaningful dispositions and classifiable practices, and that’s why cultural capital matters in the creation of educational capital (Bourdieu, 1984, 1977). Bourdieu identifies three forms of cultural capital: as *embodied* form, which is the most fundamental part, inherited from the family quite unconsciously, and in the form of long-lasting cultivation, acquisition and dispositions; as *objectified* form, which presents itself in the form of cultural goods and material objects; and as the *institutionalized* form, which is the academic qualification and can be regarded as the product of the first two forms of cultural capital (Bourdieu, 1986). But the aim of doing so is far from just distinguishing kinds of cultural capital. Instead, Bourdieu presents the routes for us to understand through which dominant classes hold the monopoly over subordinate groups (Goldthorpe, 2007a).

Perhaps the most influential and yet controversial view of cultural reproduction theory by Bourdieu is that cultural capital is exclusive and more profitable to upper classes, who make use of it to legitimate dominant culture and perpetuate privilege. Bourdieu is fully aware that cultural capital is possessed unevenly by the social position and that, in general, dominant classes keep the monopoly of the symbolic order of significant distinction (Bourdieu, 1984). However this does not necessarily mean that upper classes at the very top of the hierarchy may exactly be ‘the most well-off in terms of cultural capital’ (Bourdieu, 1973, p. 86). Unlike economic capital and power, there is not a consistent one-to-one match between different sections of dominant classes and the possession of cultural capital, and situation occurs when sons of secondary school teacher, who on the whole belong to middle classes, might hold better diplomas and more cultural capital than sons of upper classes who might be economically privileged but culturally deprived. However, the harsh reality is that for subordinate classes and groups, merely a diploma or school title is far from guaranteeing the highest social position, and the efficacy of cultural capital lies in economic capital and power, both of which can help to strengthen and amplify the profits of cultural capital. After all, even if a son of a white-collar worker obtains the same diploma as a son of an industrialist, the former may still find it hard to attain the same social status or occupy the same social position as the latter who may just be bequeathed the firm or the post from his family (Bourdieu, 1973). That is to say that cultural capital acts not to push the disadvantaged up, but in a more subtle way to legitimate hereditary and maintain advantages for the privileged (Bourdieu, 1973; Willis, 1977, p.128) , and that is why from this point of view, Bourdieu claims that dominant classes have benefited more from the socially uneven distribution of cultural capital, through which they are able to maintain their class advantages and dominance in regard to subordinate classes (Bourdieu, 1973; Bourdieu and Passeron, 1977).

Furthermore, Bourdieu focuses on French school system to reveal how society reproduces itself by means of school system contributing to the reproduction of the distribution of cultural capital (Bourdieu and Passeron, 1977, p.vii). Prior to Bourdieu, 'Bowles and Gintis were the most visible spokesmen for the reproduction theory of American Education' (Willis, 1981, p. x). According to these two sociologists, rather than being viewed as presenting the real land of opportunity, the US educational system should be viewed as reproducing capitalist division of labour (Bowles and Gintis, 1976). However, they fail to elaborate how school systems reinforce patterns of social class, and the schooling process is like a black box, with parental class going in and intergenerational persistence of affluence and poverty coming out. In order to explain what happens inside the black box, Bourdieu proposes the two aspects of cultural transmission, which are cultural transmission by the family and cultural transmission by the school, and he stresses that inherited from the family, cultural capital can be recognised and guaranteed by the school system (Bourdieu, 1984, p.23). Therefore, it is not that schooling has been something that generate the poor who are poor; it is just that the school system is founded on the acquisition of dominant knowledge and culture. The poor is lacking in cultural capital, which is manifested in the cultural competence, class disposition, linguistic capital and ultimately academic qualification, and that is why they are inferior to the privileged, who impose the cultural arbitrary based on power and share the similar cultural values with the educational system. Together, by legitimating the culture of dominant classes and established social order, the educational system in France fulfils its role in the reproduction of the whole social system (Bourdieu and Passeron, 1977).

Cultural Mobility. Despite Bourdieu's contribution, the cultural mobility hypothesis was first put forward by DiMaggio, who challenges cultural reproduction theory mainly in two ways, based on the American society. First, contrary to the belief that cultural capital can mediate the effect of social class on educational outcomes, he argued that the positive effect of cultural

capital is largely independent of social origins (DiMaggio, 1982; DiMaggio and Mohr, 1985). Second, in opposition to what Bourdieu believed that cultural capital is the most advantageous to dominant classes, DiMaggio (1982) lends support to the very opposite that, the returns to cultural capital are greater for the non-elite and boys in particular. He contends that American market economy is a relatively fluid system, where family background and social origins cannot entirely shape or determine the endowment of individual's cultural capital, but only partially influence it. In other words, lower classes might climb the social mobility ladder with the help of cultural capital; by contrast, cultural capital is just one of the many guarantees of securing class privilege for dominant classes. Investigating the effect of cultural capital on 2906 high school white American students' self-reported grades, DiMaggio found that while cultural reproduction model can be well applied to female samples (i.e., the higher the social class, the more benefits of cultural capital can adolescent girls reap), this is not true among adolescent boys, because compared to upper classes boys, the benefit of cultural capital is bigger for middle- and lower-class boys. In order to explain these divergent findings, DiMaggio suggests that sons of upper classes might regard cultural capital as an alternative strategy of the maintenance of privilege and do not take it seriously, whereas sons of lower classes may value cultural capital (e.g., participating in cultural activities) as ways to attain upward mobility and offset their class disadvantage. Subsequently, several empirical studies have backed up cultural mobility theory in advanced societies, particularly in the U.S. (De Graaf *et al.*, 2000; Dumais, 2006; Kalmijn and Kraaykamp, 1996). If related empirical research holds true, then undoubtedly cultural reproduction theory will be prominently challenged.

In almost the same vein, British sociologist Goldthorpe found himself at odds over Bourdieu's theory of cultural reproduction from the perspective of social mobility (see for example, Goldthorpe, 2007a, 2007b). If the attainment of educational qualification could be attributed to cultural capital, then Goldthorpe poses a challenge to Bourdieu's reproduction theory by

stressing that it ignores opportunities and fluidity schools also created for the least advantaged with the expansion of education. Goldthorpe cites many findings on the basis of British data to bear this out, all of which documented obvious upward mobility in terms of education in the course of educational expansion in Britain (Goldthorpe, 2007a). Goldthorpe claims that although there has been some controversy over whether educational expansion and reform actually narrow the educational disparities among different social origins, no evidence goes to the very opposite based on any modern society. In other words, contrary to what Bourdieu believed that dominant classes exclusively occupy educational qualifications, what Goldthorpe suggested is that there are increasing numbers of children from more disadvantaged backgrounds reaching even higher levels of educational attainment (Goldthorpe, 2007a). However, the main research interest of Goldthorpe and other British mobility analyses is not about cultural transmission. They extend their paradigm of absolute and relative social mobility (Goldthorpe *et al.*, 1987). Goldthorpe measured education by a relative scale and found that associations between social origins and educational attainment (OE association) and social origins and destination (OD association) seem to be stable over time regardless of decades of educational expansion (Goldthorpe, 2016). Also, Devine (2004) argues that Goldthorpe and Bourdieu, whose theory alone cannot explain reproduction and mobility of class relations, are limited in the over emphasis on the singular importance of either economic resources or cultural capital. Showing how middle-class parents mobilise their economic, cultural and social resources, Devine (2004) contends that cultural resources can be assessed by children from different social origins, which means no stratum can have a whole monopoly on it.

Culture production. In 1977, a hugely important ethnographic study by British sociologist Paul Willis sought to answer the question of why and how ‘working-class kids get working-class jobs’ (Willis, 1977, p.1). According to Willis, even if cultural reproduction theory by Bourdieu, which tries to open the black box of social reproduction by bringing in the notion of cultural

capital marks a serious advance, his theory is still inadequate and deficient in explaining subordinate reproduction and transmission (Willis, 1981). In other words, Bourdieu's realm of the cultural reproduction is useful in understanding how dominant classes legitimate and reproduce themselves by means of dominant culture, but this makes no sense to explain why subordinate classes and groups would passively accept their culture inferiority and be ultimately subject to the fate of disadvantaged social position (Willis, 1981). By stressing the process in which working-class kids struggle, resist and create their own counter-school culture, Willis contends that working-class kids are ruled out, not because they do not have cultural competence, dispositions and language skills, nor are they ill-endowed with dominant culture that they need to enter privileged classes, but because they subjectively resist learning school knowledge and experience, refuse to have credentials or school titles, which they feel are less rewarding, and self-choose to become manual labour (Willis, 1977). It is in this regard that Willis writes from the very beginning of his work – 'The difficult thing to explain about how working-class kids get working-class jobs is why they let themselves' (Willis, 1977, p.1).

What Willis has done is to introduce what he calls *cultural production* for subordinate classes, which is the collective meaning-making process of resistance and awareness, through which the subordinate respond subjectively in their own way to social conditions or social relationships with oppositional cultures, but ironically, this dynamic rebellion process does not change the destiny of those at the bottom end or lead them to upward mobility, but instead partly contributes to the self-formation of the subordinate (Willis, 1981). It has been suggested that cultural production is different from cultural reproduction and social reproduction in three aspects. First, be it Bowles and Gintis, or Bourdieu, these theorists recognize no differences among different social classes in the process of reproduction of labour power, but Willis realizes the distinctive culture of the subordinate and tries to distinguish cultural forms between the dominate and subordinate. Second, subordinate classes are not zombies, who are passive

bearers of dominant ideology, as Bourdieu implies. Willis stresses the relatively independent culture and consciousness of the subordinate and its role in social reproduction in general. Third, rather than focusing on the pedagogic action or hidden curriculum at school, as Bourdieu, Bowles and Gintis have done, Willis views school as a battlefield. Schools according to Willis, fulfil its role in reproduction of capitalist labour power through contradiction and conflict (Willis, 1977, p.xii). However, it is exactly the obvious resistance to dominant ideology (i.e., schoolwork, teacher's authority, credentials), ironically help to self-prepare for a working-class destination and the reproduction of division of labour.

2.2.2 Intensive Parenting in a Changing Social Structure

Recently, there has been a greater focus placed on more involvement in children's lives. Several studies have documented that intensive parenting is the primary means of parents from middle classes to raise children in the United States (Lareau, 2003; Nelson, 2010). According to Lareau, middle classes are defined as parents who are employed in a position that either entails substantial managerial authority or that centrally draws upon highly complex, educationally certified skills. In contrast to middle-classes, Lareau also defines working classes and the poor; the former refers to those who are neither managerial nor educated, including lower-level white collar workers; the latter refers to those who are unemployed and rely on public assistance. Lareau argue that middle classes adopt strategies of concerted cultivation, who deliberately try to foster their children's talents, skills and social competence by leisure activities, language use and intervention in institutional settings. By contrast, working classes and poor families view sustaining children's natural growth as an accomplishment, in which parents are responsible for food, shelter and basic childcare, paying less attention to children's advanced development and allowing children to grow spontaneously. However, Lareau's study is based on 12 families, which may limit the generalisability of the work.

In analysis of the reasons for concerted cultivation of middle-class children or intensive parenting, a group of American sociologists have sensed the declining fortunes and economic uncertainty that makes middle-class parents anxious about their children's academic performance and worried about status reproduction (see Lareau, 2003; Nelson, 2010; Doepke and Zilibott, 2019). Parenting styles are deeply embedded in the changing social situations parents are facing. Recently, economists and sociologists have offered a dim portrait of American middle classes, whose socio-economic positions are in decline. The major study of how middle-classes are falling behind, conducted by Frank (2013), revealed that 1970s marked a turning point in terms of the distribution of income and wealth in the United States. He found that from 1945 to the early 1970s, American household income grew at roughly the same rate across all income classes (i.e., bottom 20%, second 20%, middle 20%, fourth 20%, top 20% and top 5%). Nevertheless, this growth pattern has been dramatically altered since 1970s: the more advantaged income classes, the higher income growth they enjoyed. Even if middle classes have more income twenty-four years later, they are not better off than their parents, because when looking at growth rate across all income categories, income and wealth has become more concentrated at the top. More specifically, compared to the past three decades, family income of those who are at the bottom was just 3.5 percent higher and the gains of those who are from median family rose only slightly (12.6 percent), whereas those in the top 5 percent enjoyed substantial income growth (68 percent) (Frank, 2013). In similar vein, it is argued that middle income class was shrinking in the U.S. (Duncan *et al.*, 1993; Foster and Wolfson, 2010) and the obvious manifestation was that they were experiencing downward mobility (Acs, 2011; Mooney, 2008; Newman, 1988). After 1980, downward mobility from the upper to the middle classes in America was less likely to happen compared to the earlier period, whereas downward mobility from the middle to the under classes was more likely to happen (Duncan *et al.*, 1993).

Although Lareau captures the class differences in childrearing practices, which is a great step forward for the studies of social and cultural reproduction. I feel she is weak in explaining why middle-class families would operate with logics of concerted cultivation and deliberately raise children in a way of fostering their talents and skills. Obviously, she mainly attributes childrearing differences to class differentials in life or work experience and resources including economic resources, occupational conditions, and educational backgrounds (see Lareau, 2003). According to Lareau, burdens of life, lack of transportation and worries about livelihood may deeply affect working classes organising leisure activities for children,⁴ but middle classes are facing more complex working situation that entails skills and talents, which makes middle classes fully aware of the importance of cultivating human capital. However, attributing the childrearing differences to differentials in life and work experiences is truly only half the story. Indeed, this explanation seems plausible to working classes and poor families who just undertake the accomplishment of natural growth due to lack of all sorts of resources and limited life experience, but it could not be well applied to middle classes; their deliberate cultivation of children and the highly organised activities, extended negotiation and language development between middle-class parents and children, the active intervention in institutional settings, all of which middle-class parents throw themselves into with their children are not simply because they are rich in economic, cultural and social resources and have complex and yet fruitful work or life experience; they look more like a group of people, say investors, who actively foster talents, attitudes and skills and deliberately create human capital for the sake of securing at least the same class advantage instead of falling out of it. If middle classes got a substantial fortune or became the top five percent earners overnight, would they still be so anxious about

⁴ It is important to emphasize that, however, Lareau (2003) was very aware of the relative autonomy of cultural beliefs in childrearing, and she explained that even if working-class and poor families are constrained by a lack of resources that adhere to social position, some of them still express the desire to provide opportunities for children to engage in some organised activities, but she admits that the small numbers of cases preclude her from generalizing.

their children's academic results or would they still have a hectic schedule of concerted cultivation (and especially organised activities) for their children and even sacrifice their own leisure time? My scope limits a definite answer, but it is here that I would argue that, the cultivation, the endeavour and the anxiety in childrearing of middle classes, in essence, may stem from the contradictory social position, in which they are worse off than some but better off than many; that in-between status makes them aware that within the span of their lifetimes they can ascend or descend (see Weiss, 2019), but the social climate since the end of the twentieth century implies it might be easier for middle classes to descend than to ascend. In my view, to some extent, it is the mobility pressures that spur middle-class parents into fostering talents and attitudes, transferring language skills and taste, creating human capital via organised leisure time and building social connection with schools and educators. They look like not only a group of investors, but also strugglers: they are committed to the development of their children sometimes even at the expense of their own time and needs (see Lareau, 2003), but it is motivated by the anticipation that their efforts including skill building and socializing will yield benefits in the future. Indeed, middle classes may not struggle for food, shelter and basic things, but they may be 'haunted by a fear of falling' (Weiss, 2019), struggling in their own zone to get ahead.⁵

Therefore, to some extent, intensive parenting and concerted cultivation of middle-class children may be deeply rooted in the changing social structure, and as a result of the shrinking middle classes, American parents are facing mobility pressure, and that's why they are anxious about their children to get ahead, they tend to view childhood as a chance to develop human capital, including competent, skills and talents, laying early foundation for later success, and they regard the whole process as an investment to secure class advantages. Lareau believe that

⁵ Here, middle class in this chapter refers to a socio-economic strata that falls in between the working class and the upper class.

concerted cultivation and accomplishment of natural growth are two different routines and the habitus of daily life, which are not equally legitimized in the broader society (Lareau, 2003). Obviously, the middle-class childrearing strategy of concerted cultivation seems to receive more institutional support and provide more advantages for children outside home, which are more easily accepted and legitimated by institutional gatekeepers. Also, Lareau traced study participants five years later and found that almost all the middle-class youth are on the way to a future of professional middle-class jobs except for one, whereas all of the working-class and poor youths end up in manual work or unemployment. At a glance, we have seen all children seem to end up in situations similar to those of their parents (Lareau, 2003), but is the strategy of concerted cultivation really helpful for middle classes to rise to a higher social class than their parents' class or than working-class children's class? In my view, the role of parenting practices in the process of upward or downward trajectory of middle-classes may be likened to a compass, and that is to say, on one leg the starting point is deeply rooted in the social position; on another leg, middle-classes circle around the social hierarchy; and what middle-class parents are trying to do is to take precautions against falling, move within the same level of social status and ideally rise as far as they can. However, one of the key characteristics of the compass is its limited radius or range, which suggests that no matter what childrearing practices and strategy middle classes engage in, these practices only play a limited part and that is to say, the majority of middle classes ascend or descend in their own zone. By saying this, I certainly do not mean to argue that concerted cultivation of children is in vain. Indeed, unequal childhood prepare most children for an unequal future, but I would like to argue that intensive parenting also has its limitation. That limitation not only lies in the unequal social structure where different opportunities and resources are embedded, but also stems from the concerted cultivation itself.

Recently, researchers have argued that ‘the Internet Generation’ (who were born after 1995) is becoming more fragile and anxious and less resilient. In *the Coddling of the American Mind: How Good Intentions and Bad Ideas are Setting up a Generation for Failure*, Lukanoff and Haidt contended that well-intentioned American parents are unwittingly harming their children, manifested as a combination of organised activities, the decline in free play, pampered childhoods and the culture of safetyism, which fails to fulfil the goals of leading children to being healthier and stronger, and their ability and competence to face risks or difficult situations may be severely undermined because of the over-protection of parents (Lukianoff and Haidt, 2019). Moreover, reasoning is an important element of concerted cultivation, even though extended negotiation, reasoning or questioning between parents and children may help children know how to make the rules work in their favour (Lareau, 2003), they may lose the capacity to feel empathy for others. That’s why I want to argue that concerted cultivation of middle-class children is a double-edged sword. On the one hand, middle class children do profit from the process of concerted cultivation, and children’s talents, reasoning skills and the sense of entitlement may play an important role in the reproduction of middle-class advantage; on the other, concerted cultivation of middle-class children can produce the very opposite of cultivation itself, because far more restricted childhood that coaches and prepares every step for children may hinder these children from making bigger achievements or even being long-range upwardly mobile.

2.2.3 Parenting Styles and Unequal Outcomes

Parenting styles have received considerable scholarly attention in western societies. Based on samples of European Americans, previous research mainly followed Baumrind’s typologies and has shown that authoritative parenting aids child development. For example, developmental psychologists (Dornbusch *et al.*, 1987; Lamborn *et al.*, 1991) have consistently

shown that authoritative parenting is conducive to academic performances among white students in high school, whereas both permissive and authoritarian parenting may lead to poor grades. These results have been replicated in more heterogeneous circumstances and the beneficial effect of authoritative parenting can be generalized to a wide variety of outcomes, such as mental health, internalized stress, problem behaviour, and drug use (Lamborn *et al.*, 1991; Radziszewska *et al.*, 1996; Montgomery *et al.*, 2008; Chan and Koo, 2011).

However, the relative importance of authoritative parenting is debated when it comes to the sample of Asians. Some studies, for example, found while authoritative parenting was positively associated with grades for white Americans, this correlation was near zero for Asian Americans (Dornbush *et al.*, 1987), other studies, likewise, based on the sample of Asian Americans, argued that authoritarian parenting is positively associated with academic achievements despite its detrimental effects for white Americans (Steinberg *et al.*, 1994). Overall, studies have shown that the impacts of parenting styles are contingent on different ethnic groups.

Chao (1994) was among the first study to explain why Asian Americans who were raised in authoritarian households did not report maladjustment compared to their white American counterparts. This study proposes cultural meaning for “authoritarian” might be entirely different for Asian Americans. In a subsequent study, to explain why authoritative parenting have little or no impact on Asian Americans, Chao (2001) argued that while closeness and intimacy might be important predictors of school achievements for white Americans, they have little impact on first-generation Chinese immigrants. Obviously, this argument suffered from poorly developed theory: it overlooked the intimacy or parent-child closeness is at the centre of Chinese family. In fact, social relationship in China possesses a self-centred quality, which

is similar to the concentric circles formed when a stone is thrown into a lake (Fei *et al.*, 1992). Parent-child relationship rather than husband-wife relationship form the backbone of Chinese family. Furthermore, Chao (1994) focuses solely on the cultural notion of “training” and “Xiao” (filial piety), which the author interpreted as “self-discipline” and “child obedience”, however, another important aspect of cultural norms that give fathers guidelines on how to interact with sons has been not mentioned. Chinese culture not only regulates the behaviour of offspring, which is that children need to fulfil filial piety, but also regulates the behaviour of parents, which requires parents to be kind and gracious to children. Therefore, Chao (1994, 2001) exaggerated parental strictness and child obedience in Chinese-heritage families but ignored closeness and intimacy between parents and children.

Recent empirical research based on various social contexts has focused on the active role of parenting styles with varied outcomes. Lareau’s work, *Unequal Childhood* (2003), is the landmark for studies in this field. She did fieldwork with twelve families in the United States and dubbed their stratified family life as ‘concerted cultivation’ and ‘accomplishment of natural growth’. Lareau argues that middle classes tend to engage in strategies of concerted cultivation, because they are achievement-oriented and raise children very purposefully to foster their children’s talents, skills, and social competence. In contrast, working classes and poor families just manage to sustain children’s natural growth, paying less attention to children’s advanced development. In the same vein, Putnam (2015) suggests that affluent parents make “intensive investments of time, money, and thoughtful care in raising their kids” (p.92). These parents see education as a priority, echo children’s sentiment actively, and foster a sense of autonomy, whereas in working- and lower-class families, children are left unsupervised by adults who generally rely on physical punishment. However, the research to date has been qualitative in nature and is mainly based on American samples. Due to the lack of large, representative dataset, whether parenting styles vary among different social groups deserves further scrutiny.

A growing body of research has quantitatively explored whether there are any class differentials and results diverge depending on the social contexts. For example, based on data from Panel Study of Income Dynamics, Roksa and Potter (2011) define family background according to mother's and grandmother's education and they showed that compared to stable middle-class (mother and grandmother both highly educated), stable working-class (neither mother nor grandmother highly educate) reported the lowest score to engage in concerted cultivation; new working-class (downward mobile mothers) also scored lower on adopting concerted cultivation; but new middle-class (upward mobile mothers) resemble their destination class and showed no significant difference in relation to stable middle class.⁶ Likewise, using national longitudinal data on third to six grade children in Japan, Matsuoka (2019) found that college educated parents are more likely to engage in concerted cultivation. However, using a survey data in Chinese urban areas in 2009, Hong and Zhao (2014) classified three social classes based on occupation, namely upper middle, lower middle, and routine-manual classes and showed there was no class differentials in parenting styles.

Some studies using large scale data have tested Lareau's argument by looking at the effect of concerted cultivation on educational outcomes. Carolan and Wasserman (2015) used confirmatory factor analysis to construct the measurement of concerted cultivation and cast doubt on whether concerted cultivation is an important mediator of transmitting class advantage, because using the longitudinal data from the Panel Study of Income Dynamic, they found that the mediating effect of concerted cultivation on academic achievements is nonsignificant. However, other researchers, also based on large longitudinal dataset in the United States, have supported Lareau's claim and demonstrated that concerted cultivation

⁶ The results here support the 'acculturation' theory developed by Blau (1956) and evidenced in Zhao and Li (2019) from the perspective of social mobility and subjective well-being.

significantly led to unequal achievements (Matsuoka, 2019; Redford, Johnson, and Honnold, 2009; McCoy, Byrne and Banks, 2012).

To sum up, previous empirical studies have made contributions to how parenting practices and styles vary depending on socioeconomic groups and how this leads to intergenerational persistence of educational inequality, but they have not treated social position or social class categories in much detail, nor have they developed a reasonable measurement to measure parenting styles. This study set out to address these questions and will extend childrearing research to non-western context. The next chapter will provide background information on Chinese cultural tradition, social changes and social stratification, and how parenting styles are shaped by cultural system and how parenting styles and family life among Chinese households are closely interwoven with social changes in China.

2.3 Parenting and Institutional Context

2.3.1 Social Structure, Confucian Tradition and Parenting Values in the Traditional Chinese Society

Although China has undergone profound changes in the process of modernization, some values and behaviour patterns are still stable and enduring, which serve as a basis for us to understand the nature and character of Chinese society. In the period of transition between feudalism and imperialism (more than 2000 years ago), there emerged in China Confucianism represented by Confucius and Mencius, which figured prominently in the history of Chinese thought. The Confucian school lay great stress on the self-cultivation and kindness in the human relation, on the family and household management, on valuing education and scholarship, on stressing a well-maintained social ‘order’ in which the monarch guides the subject, the father guides the son, and the husband guides the wife. These are not merely the products of the minds of a few scholars, but instead more or less reflected, adapted to and were shaped by the Chinese imperial

system. As the only source in the area, in *China's Gentry*, Fei elaborated the basic social structure and social relation in traditional Chinese society: the minority of gentry and the mass of peasants. The gentry class refers to officials, scholars, employees of the monarch and the educated land-owners in centralized monarchical China, who were neither rulers, nor relatives or members of the rulers' own family but were immune from political exploitation and it is in this sense that they differed from the peasantry (Fei et al., 1953). However, peasants and gentry classes were not confined to their social origin throughout their lives, because to some extent there was mobility between them. If the peasants want to climb into the gentry class, one of the main avenues was to succeed in the official examination. Put differently, in the stable political system, a channel for upward mobility was open for the peasants through which they could earn their living not by doing farm labour, but by entering the educated elite circle and serving the imperial state, thus bridging the gap between the ruler and the ruled (Fei et al., 1953). Even though there is still debate on the extent to which the official examination served as a vehicle for social mobility and whether the imperial social system was an open or closed one (Ho, 1962; Elman, 2000, 2013), there is no denying that one of the by-products of the national examination system for officialdom is that the value or the belief that one can climb up the imperial ladder by means of classical education deeply affected every member of the society and even lodged itself in the public mind. "Wealth won't last longer than three generations", as the old saying goes. Traditional Chinese people never viewed their life as changeless and never believed their life would turn out in a certain way, but instead they aspired to become educated elites, be appointed as bureaucrats, and bring honour to the whole clan. Consecutive generations would do the same thing, promoting status or achieving prestige little by little, pushing for greater

upward mobility and avoiding downward mobility (Fei, 1946; Zhai, 2011). The poem of a nine-year-old child⁷ expressed such feeling and value:

All occupations are inferior.

But becoming a scholar-official is superior.

.....

When sun rises, I am just a peasant, working the land.

When sun disappears, I enter the royal court, summoned by the monarch.

Generals and officials, they are not noble at birth.

Being a man, I must be self-reliant and resolute.

Certainly, the transition from a peasant boy to an educated elite who attained the examination success, just as the poem depicted, was quite rare in imperial China, but the individual hopes and family incentives to get ahead had been created objectively by this system, encouraging individuals and families to prepare for the official examination (Fei, 1946). That is why the poem and legend like this have been widely retold and spread. However, considering that a lot of cultural resources that the gentry class provided to their son on the one hand and people at the bottom had been excluded from the examination system on the other, several scholars suggested that social mobility was quite limited and thus the official examination system in essence stabilized and reproduced the imperial structure. That is to say, it was under the guise of selecting best minds and the talented that the official examination systems ultimately consolidated the existing position and power (Fei, 1946; Elman, 1991). Therefore, the Chinese pattern of state strengthening, - centralization, Confucianism and official examination system was inextricably interwoven but played a cohesive role in imperial China. In the centralized monarchical system, the emperor was at the very top of the social pyramid and had absolute power, but vast areas meant it was impossible for him to administer the country by himself (Fei et al., 1953), therefore the gentry class emerged, who processed prestige, economically owned

⁷ In “Poem of Child Prodigy” (also called “Shen Tong Shi”) by Wang Zhu in the Northern Song dynasty (960-1127). Available at <https://hanyu.baidu.com/shici/detail?pid=ce7bac94f57411e58e55c8e0eb15ce01&from=kg0> (Accessed: 6 June 2020). Free translation by Sijia Du.

land but mainly served as servants or employees with administrative power and no power of policy-making (Fei et al., 1953, 1946). At the central level, they attempted to exercise influence by putting forward a set of ethical principles (mainly the teachings of Confucius), whereby restricting the wrong behaviour of the ruler (Fei et al., 1953). At the local level, they are responsible for and answer to their superiors (Fei, 1946). Since the existing order and imperial system did no harm to them, even if they were lacking in the power of deciding political issues, they could protect their own kin and local people by subordinating themselves to the ruler, thus they formed the solid basis for upholding the imperial structure and became the biggest obstacles to revolution (Fei et al., 1953). However, theoretically there was no social barrier that hindered one's completion of the goal of entering the gentry class, because all the discontent towards one's circumstances could be appeased and converted into a motivation to learn Confucian classics, whereby the underprivileged had the opportunity to become a scholar-official (Fei et al., 1953). This is the reason why in the traditional Chinese society, peasant rebellions only occurred when the ruler exploited them so much that they could not tolerate any more, often accompanied by crop failure and economic hardship. In most cases, peasants are nonaggressive (Fei, 1946). In view of this, be it the gentry class, or the mass peasants, the traditional social pyramid was very stable at each layer. And most importantly, Confucianism was the lubricant of the imperial structure, through which any polarisation and animosity was appeased and balanced: Confucianism not only defines the way of a good emperor and but also the way of a good subject; it not only stresses the importance of "order" – that is, the ruled should always obey the rulers without question, but also stresses the importance of "common people" – that is the ruled are the water, and the ruler is the boat; the water can carry the boat, but also sink it⁸; "man is the most valuable among all the things that the heaven fosters"⁹.

⁸ In "Xunzi". It is originated in Xunzi also known as Xun Kuang (310 B.C. – 215 B.C.). At the beginning of the Tang dynasty (618-907), chancellor Wei Zheng and emperor Taizong also quoted this analogy many times. See "Zhen Guan Zheng Yao".

⁹ In "Shuo Yuan", in the Western Han dynasty (206 B.C. – 24 A.D.) by Liu Xiang

Therefore, the social structure formulated by Chinese forefathers did not seemingly favour any polarity, but tried to reach a level of social equilibrium, whereby it ultimately strengthened and supported the imperial structure.

In this light, there were three characteristics of parenting values in the traditional Chinese context. First, traditional Chinese society emphasizes the role of family in children's education. As mentioned earlier, there was a huge pressure related to upward mobility among the individual and the family, especially among the gentry class in imperial China. The ideal of getting ahead by means of the official examination was not exclusive to the affluent and the privileged families, but almost all the families could, in theory, try to fulfil the hopes (Zhai, 2011). "Only providing basic childcare without educating and teaching, parents are to blame"¹⁰. But why did traditional Chinese people attach so much importance to the role of family? To a certain extent, the social attitudes of familism developed from a set of social facts, and one of the key aspects is that family is the basic unit of social production and social organization in the small-scale peasant economy. "It is the family where teaching and education begins"¹¹. The special kinship relationship and family cooperation made it possible for parents to engage in home education and the clan or big family naturally constituted a group which could take action of this sort, supporting one of their members until the time when he should become a scholar and be eligible for the official examinations (Fei et al., 1953). It was believed that individual was embedded in the family context and climbing up the imperial ladder was not about the goal or the aspiration of a single individual, but about the responsibility and obligation of the whole clan or the big family. This cultural tradition, taught from generation to generation, has played a great role in binding and regulating the individual, the family, and the society. Even in the 21st century, China is still defined by traditions of family, scholarship, and honour. 'The

¹⁰ In "Three Character Classic" (also called Sanzi Jing). It dates from the Southern Song dynasty (1127- 1279) and is attributed to Wang Yinglin, but it was constantly updated and modified in the following dynasties.

¹¹ In "Book of Changes" (also called Yi Jing), in the Western Zhou dynasty (1046 B.C. - 771 B.C.) by King Wen.

expected role for a typical youth between the ages of 12 and 22 is rather clear: studying hard, scoring highly on entrance examinations, and bringing glory to the family' (Yi, 2013, p.4). Chinese parents nowadays are still viewed as the main educators who should be responsible for children's schooling.

Second, traditional Chinese society focused on childrearing rather than childbearing, and placed a higher value on the family obligation to teach children virtue, ethics and moral principles, and on the process of building children's good character and fostering their qualities, such as benevolence, diligence and frugality. In essence, Confucianism elaborated the role of parenting in the cultivation for achieving social harmony and maintaining socio-political stability. Confucianism believes that the stable society begins with the cultivation of the individual. Therefore, influenced by the Confucianism, the gentry class tend to set up the guideline for the clan and the offspring on how to maintain the true nobility and how to cultivate themselves and develop true virtue. A good example taught from generation to generation is how Mencius' mother raised him. Mencius' mother moved three times so as to find the most suitable place for him to grow up, and she taught him a lesson in a respectful and productive way when she found that Mencius was playing truant. By doing so, she instilled the importance of hard working and self-cultivation in his mind¹². Another example was how Zhuge Liang

¹² The mother of Mencius (372 B.C. – 289 B.C.) lived in Zou in a house near a cemetery. When Mencius was a little boy, his father died. Mencius liked to play burial rituals in the cemetery, happily building tombs and grave mounds. His mother said to herself, "This is not a good place to bring up my son."

She moved near the marketplace in town. Mencius then played merchant games of buying and selling. His mother again said, "This is not a good place to bring up my son."

So once again she moved, this time next to a school house. Mencius then played games of ancestor sacrifices and practiced the common courtesies between students and teachers. His mother said, "At last, this is the right place for my son!" There they remained.

When Mencius was young, he came home from school one day and found his mother was weaving at the loom. She asked him, "Is school out already?"

He replied, "I left because I felt like it."

His mother took her knife and cut the finished cloth on her loom. Mencius was startled and asked why. She replied, "You're neglecting your studies, and this is very much like my cutting the cloth. The superior person studies to establish a reputation and gain wide knowledge. He is calm and poised and tries to do nothing wrong. If you do not study now, you will surely end up as a menial servant and will never be free from troubles. It would be just like a woman who supports herself by weaving to give it up. How long could such a person depend on her

persuaded his son to be a noble person¹³. In most cases, the parenting goal of self-cultivation interweaves with the emphasis on keeping learning, and once this is attained, according to Confucianism, people can regulate their family and serve the state.

Finally, one of the crucial parenting values in traditional Chinese society was *hsiao* (Xiao), normally rendered as “filial piety”, but it has been suggested that “piety” is not the appropriate term (see Hamilton, 1990), because “piety” literally means behaving in a way that shows respect for religion. Obviously, *hsiao* refers to sincere obedience and respect to parents, and it reflects the well-ordered state and subordinate relationships in the family contexts. Thus, *hsiao* should be translated into ‘filial duty or submission’, and more exactly it is the respectful submission to the male head who had absolute authority in the household (see Hamilton, 1990). Children were required to show respect and deference to the father and the grandfather in the family and the younger to the elder family members, just as the way officials are subjected to the monarch and the inferior to the superior. Thus, *hsiao* sets guidelines about familial relationships and exemplifies how social relation and social structure works in miniature. However, obedience on the surface was not *hsiao*, because what Confucius delineated looked more like reverence for and obedience to parents from the inner heart with love and emotional bonds that put familial relationship on a permanent footing.¹⁴ It was in this sense that

husband and son to stave off hunger? If a woman neglects her work or a man gives up the cultivation of his character, they may end up as common thieves if not slaves!”

Shaken, from then on Mencius studied hard from morning to night. He studied the philosophy of the master and eventually became a famous Confucian scholar. Superior men observed that Mencius’s mother understood the way of motherhood. *The Book of Songs* says, “That admirable lady, what will she tell them!”

In “Lie Nv Zhuan” by Liu Xiang in the Western Han dynasty (206 B.C.- 24 A.D.). Translated by James McGrath. See <https://blogs.butler.edu/ghs208reader/2020/09/23/mencius-mother/> (Accessed: 1 September 2020).

¹³ In “Admonition to My Son” (also called Jie Zi Shu), by Zhuge Liang, a great strategist in China’s Three Kingdoms Period (220 – 280 A.D.). See <https://write.as/ghostofwalden/jie-zi-shu> (Accessed: 1 September 2020).

¹⁴ Meng Yizi asked about *hsiao*. Confucius said, “never disobey”. . . . Fan Chi asked, “what do you mean by that?” Confucius replied, “when his parents are living, a good son should do his duties to them according to the usage prescribed by propriety; when they are dead, he should bury them and honour their memory according to the rites prescribed by propriety.” (Analects of Confucius 2.4) translation by Gu Hongming.

Meng Wubo put the same question to Confucius. Confucius answered, “think how anxious your parents are when you are sick, and you will know your duty towards them.” (Analects of Confucius 2.6) translation by Gu Hongming

Confucius viewed *hsiao* as good dispositions that children need to be cultivated so that they could process.¹⁵ Therefore, *hsiao* was rooted in the hierarchical social structure on the one hand and was regarded as a moral rule that guides and regulates the parent-child relationship on the other.

2.3.2 China's Market Transition, Educational Expansion and Social Stratification

Since the implementation of the market-oriented reforms in 1978, China has witnessed profound changes never seen in the country before. Centred on who gains and who loses, sociologists have long debated the changing stratification system of this transformation. Several divergent accounts of the power consequences of this economic reform have been proposed, creating numerous controversies. Some studies predicted that the power of the communist cadres will decline with the transition to a market-like economy, and one of the main reasons is that market mechanism and autonomy in private sectors means more resources and power will be shifted from redistributive sectors to direct producers and private entrepreneurs, typified by Nee and his colleagues (Nee, 1989; Nee and Matthews, 1996), while other scholars, holding different views to the hypothesis of the erosion of redistributive power, found the “persistence of power” by stressing that cadre influence was enhanced by the system of work units that exercise control and allocate resources in the urban reform process (Bian and Logan, 1996). Some studies showed that in the rural area, political influence may be interwoven with market, which means local administrators still have relative advantage by means of informal bargaining (Parish and Michelson, 1996).

Zi You asked him the same question as the above. Confucius answered, “nowadays *hsiao* means to be able to support one’s parents. But you also keep your dogs and horses alive. If there is no feeling of love and respect, where is the difference?” (Analects of Confucius 2.7) translation by Gu Hongming.

¹⁵ The master said, “when his father is still alive, observe the son’s ambition; when his father is dead, observe the son’s behaviour; if he for many years does not abandon the good manner of his father, then he could be called “*hisao*” (Analects of Confucius 1.11). Free translation by Sijia Du.

With hindsight, despite the light shed on market outcomes, existing studies were unsatisfactory: Nee (1989) viewed the fate of party elite as an either-or situation – either the cadre power is eroded or the market reform is deepened, but they cannot co-exist. In fact, both redistribution and market can work jointly to shape the order of social stratification and mobility (Liu, 2003); Bian and his colleagues simply equated cadre power with redistributive powers (Bian and Logan, 1996), without fully realizing the shifting role of administrative elites (Liu, 2003) and the collapse of work unit system (Wang, 2008) in the process of market-oriented transition; Although Parish’s data was based on China, his theoretical explanation is built on Stark’s earlier work on Hungary that took a big bang approach with its economic reform (Parish and Michelson, 1996), which may not be well applied to China whose economic reform is in a gradualist and experimental fashion (Liu, 2003). Based on surveys conducted in Beijing and two other coastal cities (Wuxi and Zhuhai) in 1998, Li (2003b) proposed a thesis of “reproduction of social strata” with the market-orient reform. To explain this, he stressed that the patterns of social stratification are not merely determined by market mechanisms but are the consequences of many institutional arrangements and suggested that the state-led transition meant political elites still played a dominant role in the reallocation of resources and power.

With marketization, however, there are surprisingly consistent findings regarding the role of human capital characteristics in the changing social stratification system. Several scholars believed that one aspect of the consequence of market-oriented transition is that education become an indicator for socio-economic stratification. Market-oriented reforms provide new opportunities and alternative avenues for getting ahead in the market sector, resulting in increasing earning returns to education in the reform era, and education becomes an important instrument for upward mobility (Bian and Logan, 1996; Nee, 1989; Zhou, 2000). More precisely, those who initially were in the state sector and voluntarily made a transition to market sector later enjoyed higher education returns with the proceeding of marketization (Wu and

Xie, 2003). Thus, market-oriented transition gives new impetus to the role of education, and attainment of higher education is playing an increasingly important role in the process of social mobility and status attainment (Nee, 1989; Walder *et al.*, 2000).

Give this, one of the most influential characteristics of this transition is the expansion of higher education since the end of the 1990s. From 1999 to 2016, gross enrolment rate of higher education rose from 10.5% to 42.7%. However, when universities reopened in 1978, this figure was only 1.56% (Wu and Du, 2018). Several studies have demonstrated that the economic returns to higher education have increased in almost 20 years (Liu, 2015b; Heckman and Li, 2004). Based on Chinese Household Income Project data, Liu (2015b) estimated the economic returns to higher education in 1988, 1995, 2002 and 2007 at 11.71%, 29.13%, 42.32% and 61.53% respectively. He suggested that with the educational expansion and the economic-oriented reform, the attainment of higher education was an increasingly valuable and powerful investment for the individuals.

Different from economic literature, the focus of educational expansion in China by a group of sociologists is on two issues: (1) who get admitted to higher education? (2) who benefits most from higher education (Brand and Xie, 2010; Guo and Zhou, 2020). The former focused on the association between social origin and educational attainment since the expansion of higher education and found that educational inequality has risen sharply since 1978 and the privileged class gain more access to higher education (Li, 2003a, 2014; Li, 2006; Wu, 2013); the latter focused on the consequences of higher education and explored whether the returns to higher education are different among different socioeconomic groups. A recent study by Guo and Zhou (2020) found that since the educational expansion, middle classes enjoy the highest rewards of higher education. Using CGSS data 2003 – 2015, they showed that in 2003 (four years after the initiation of educational expansion in 1999), the higher the socioeconomic class,

the more rewards of higher education. However, between 2003 and 2006, the return of higher education in terms of upper classes gradually decreased, whereas the returns of higher education for lower classes and lower middle classes increased. Since 2008, there has been a reverse-U association between socioeconomic status and the return to higher education and middle classes tend to enjoy the highest rewards of higher education. They suggested that middle classes who benefited most from higher education were also the main beneficiaries of the current social structure. In this way, inequality is continually socially reproduced but at the same time there are avenues for social mobility, which by and large stabilizes social structure.

2.3.3 Parenting in Contemporary China: What is the Difference?

Given the important role of education in the process of status attainment and social mobility in the reform era, a growing body of research has made a cultural turn, focusing on the family milieu in which Chinese parents transmit class advantage to academic attainment. Scholars have asked: are there any class-specific differences of parenting values and parenting practices in China? The common starting point for these scholars exploring the relationship between social strata and parenting practice is generally that of looking at whether market-transition brings economic divisions of middle classes along with the distinction of its childrearing preferences or choices (Hong and Zhao, 2014; Tian and Jing, 2021). Although previous studies offered fresh insights into explaining class differentiation of parenting practices or parental educational investment in urban China, they failed to provide an overall picture of parenting practices or family life and more importantly they have largely ignored the unique complexities faced by Chinese teens and their parents.

Firstly, previous studies studying intergenerational transmission of educational advantage in China are often based on Bourdieu's theory, such as borrowing the concepts of "cultural capital" or "habitus" or viewing parenting practices as embodied cultural capital to explain Chinese

context, however, unlike western societies, the initiation of market-oriented reform in 1978 has resulted in a change of social class structure¹⁶ (Lu, 2012). The increasing proportion of middle classes and policies to develop an olive-shaped distribution structure (Li and Zhu, 2015; Lu, 2012, pp.59) means middle classes today might be a heterogeneous social group, and that partly explains why a recent study has shown that there are not any significant class-based differences in parenting attitudes or parenting values in urban China (Hong and Zhao, 2014). Lu (2012) also argued that from 1978 to 2008, the income gap between the highest and the lowest was widening and three groups at the bottom (workers, peasants, and migrant workers) benefited very little from the market-oriented transition. However, research showed Chinese parents who were of working-class origins but experienced upward mobility, are more likely to engage in concerted cultivation of children (Tian and Jing, 2021). Besides, rural-urban divide is one of the most prominent social divisions in China. This is based on governmental household registration system (*Hukou*), which is assigned at birth and broadly divides citizens into urban residents or rural residents. Under *hukou* system, those who are urban *hukou* holders have preferential treatment, and they have better social benefits because their local government has more resources, whereas the majority of those who are rural *hukou* holders were confined to the countryside, and *hukou* places particular burdens on them seeking to move from rural areas to urban areas. The social dispositions and habitus of urban *hukou* holders might be different from those of rural *hukou* holders because of different life circumstances. Some studies have documented rural-urban discrepancies in terms of parenting styles (Lu and Chang, 2013; Chen *et al.*, 2010). In conclusion, dramatic social change in China has created two social stratification

¹⁶ Based on the 2005 sample survey of 1% of the population of China by the National Bureau of Statistics and data from the 2006 national comprehensive social survey by the National Academy of Social Sciences, Lu (2012,p.403) classified ten social strata: the state and social administration class (2.3%), private entrepreneurs (1.3%), managers (2.6%), professional and technical personnel (6.3%), clerks (7.0%), individual business owners (9.5%), employees in commercial services sector (10.1%), industrial working class (14.7%), agricultural labourers and the stratum of the jobless (40.3%), unemployed and underemployed (5.9%).

system that may have an impact on parenting styles: one is social class and especially class positions, the other is *hukou* system.

Secondly, the other aspects of Chinese parenting are that parents are believed to be responsible for their children's education and parents place a high premium on children's academic excellence to honour one's family (Yi, 2013; Wu, 1985). From the perspective of psychological controlling, a group of psychologists point out that Chinese mothers are more likely to base their worth on their children's accomplishments compared to their American counterparts (Ng., Pomerantz and Deng, 2014). From the perspective of the pressure of social mobility, Chinese middle-class parents are beneficiaries of education in the market-transition period, thus they are more likely to be concerned with children's education and committed to children's schooling to maintain the current class advantages (Sheng, 2014). Today's Chinese parents are very anxious about their children's school performance, as well as campus safety and mobile phone addiction. Moreover, Chinese cultural tradition valuing education and encouraging the pursuit of scholar-official is deeply ingrained in most people's mind so that many Chinese parents view children's academic success as family investments and emphasizes parental efforts and sacrifices on children's education. A recent study by Liu and Xie (2016) have shown that Asian American parents tend to bear their home cultural roots and have higher educational expectation than white parents, and parents' education expectation depends less on family SES among Asian Americans than among whites. Others have found that Chinese parents in big cities pour loads of money to buy housing within the walking distance of the high-quality schools for their children, which even affects the markets of real estate in some cities, resulting in the increase of the value of the housing (Hu *et al.*, 2014; Hong and Zhao, 2014; Wu and Huang, 2017). Even if parents are required to pay a premium for the housing which might be not as comfortable and liveable as others, some of them are still willing to buy so that their children could gain access to better educational resources. In short, Chinese parents commonly

attach importance to school performance and are committed to children's education both emotionally and financially.

Thirdly, one of the characteristics of Chinese parenting styles often discussed by both Chinese and Western scholars is authoritarian parenting practices among Asian Americans (Chao, 1994; Steinberg *et al.* 1992). However, what the public know about authoritarian parenting is largely derived from Amy Chua's (2011) book about "tiger mom" - basically, Asian-heritage parents raising children in a harsh, demanding, or authoritarian way to attain better academic performance. This kind of parenting style is contrary to what we call "supportive" parenting, i.e., habitual displays of high levels of encouragement, affection and warmth and low levels of parental control, strict rules, and physical punishment. Some studies have argued that Asian American children in general do not interpret authoritarian parenting as hostility, mistrust, and dominance, therefore children of authoritarian parents report low levels of maladjustment and even academic excellence compared to their western counterparts (Chao, 1994; Steinberg *et al.*, 1992; Yi, 2013). However, a highly demanding, intrusive, and controlling environment might generate mental health issues such as anxiety, and children might learn the way to behave and respond to others accordingly. For example, Nguyen (2008) found that Vietnamese American parents also tend to adopt authoritarian parenting styles, but Vietnamese American children are more likely to suffer from symptoms of low self-esteem and depression with authoritarian parents.

Despite existing findings shedding light on authoritarian parenting practices, two issues still deserve further scrutiny. The main issue comes from the selectivity of Asian immigrants who generally are believed to have higher human capital and high average earnings/education in the United States (Xie and Goyette, 2003; Portes and Fernández-Kelly, 2008). Researchers have shown that Asian Americans are more likely to value hard-working and the importance of good

education (Liu and Xie, 2016) but they ‘pay a higher price than whites for achieving the same social status’ (Xie and Goyette, 2003, p.468). This is also true for the children of ethnic minorities in the UK including Chinese British children who need to aim higher and work harder (Li, 2018). Thus, it might be highly likely that Asian American parents such as Amy Chua who are so desperate to push children and be strict with them, but I cast some doubt on whether authoritarian parenting is linked with this selective immigration in Asian immigrants. The second issue stems from the rapid social change in East Asia. Yi has argued (2012) that different from past generations, the life courses of today’s teenagers in East Asia might be altered dramatically considering the influence of social media, as well as the cultural communication with the West, and they might face the dual effect of tradition versus modern. Therefore, the question regarding whether Chinese parents typically adopt authoritarian parenting styles remains unknown.

Finally, past research has offered special insights into indigenous concepts of parenting practices such as ‘disciplining/training/guiding’ (*guan*, 管). Chao (1994) found that Chinese parents score higher on “training” ideologies and believed that the concept of “training” is more important than “authoritarian” to explain Chinese parenting style, not only because *guan* holds some distinctive meaning such as “teaching” or “educating” for Chinese, but also because this term emphasizes knowledge, skills and social norms can be passed on to children through disciplining and motivating them. Tobin *et al.* (1989, p.42) explain that this Chinese word combines the English- language meanings of educate, care for, support, control, and love. Wu (1985) found that Chinese mothers just pretend to beat children rather than actually hurt in terms of physical punishment and the majority of children felt certain that they had a loving mother. Therefore, *guan* is distinguished from dominating control that involves a high level of demand on children and different from hostile, rejecting and uninvolved behaviours, but instead has a positive connotation of being responsible for children, such as correcting

children's wrong behaviour and teaching. I posited that child-training behaviour or *guan* is one of the unique Chinese cultural characteristics and can be viewed as a crucial factor or variable in the explanation of Chinese parenting practices or styles.

Chapter 3 Data and Method

3.1 Data

3.1.1 China Education Panel Survey

My empirical analyses are based on China Education Panel Survey (CEPS). The CEPS is a large-scale, nationally representative, longitudinal survey. The baseline data collection started in the 2013-2014 academic year and 19487 individuals in 112 schools were randomly selected from 28 county-level areas of China. These individuals were composed of two cohorts – both 7th grade individuals (10279) and 9th grade individuals (9208) in junior high school, among which 9th graders were experimental/pilot samples whose information was not collected in wave two. The CEPS will last more than 30 years, during which a new cohort of 7th graders will be started at a 10-year interval. In 2014-2015, the 7th grade sample in the baseline survey was followed up and re-interviewed over a broad range of topics, including childhood experience, health, household structure, parent-child interactions, school performance, extracurricular activities, relationship with teachers and peers, social behaviour development, etc. These datasets are particularly useful for research on parenting styles or practices, because one of the adults in the same household of the sampled students were also interviewed, providing useful information on the childrearing of their children, such as educational environment and investment for the child, community environment, parent-teacher interactions, and parental expectation. Moreover, the detailed information covered in the survey includes scores of standardized cognitive ability tests and Internet-based personality tests for all sample students and their transcripts of important examinations. This study restricts its sample to all 9449 successfully followed-up individuals in 2014 – 2015, who were in the 7th grade in the baseline survey and in the 8th grade in the wave two. By doing so, we could trace and compare changes and check the robustness of the sample. The overall follow-up rate is 91.5%. Table 3.1

shows a glimpse of the data structure of CEPS (The distribution of age groups is presented in A.1 in Appendix).

Table 3.1 Sample size of China Education Panel Survey

CEPS Survey	Participants	Sample Size
Baseline Survey (2013-2014)	7 th graders	10279
	9 th graders (experimental/pilot samples, not included in the wave two)	9208
Wave Two (2014-2015)	8 th graders who were 7 th graders in wave one	9449
	newcomers in the grade 8	471

3.2 Measurements

3.2.1 Measures of Class Position

So far, the term class position has been elaborated differently in different societies based on different methods. In this study, we use two approaches to measure class position, one is categorical classes using Goldthorpe class schema (Erikson, Goldthorpe and Portocarero, 1979; Erikson and Goldthorpe, 1992), and another is social status variable taking occupation titles, education, political affiliation, and perceptions of family condition into account. With the market-oriented reform, Chinese social change and fluidity might share some similarities (e.g., industrialization, employment relation and occupational structure) with the social mobility in industrial societies (Zou, 2015). Thus, a major advantage of following this convention is that not only can class categories be used for international comparison, but also it provides a more comprehensive understanding of Chinese social strata.

Social Class Categories. This analysis uses parent’s reported occupation titles. In the raw data, the question reads: “What is the current occupation of this child’s mother?” and “what is the current occupation of this child’s father?” Responses were on 14 categories, 1: government official/cadre, 2: cadre/official/administrator of public institutions, enterprises or corporations, 3: scientist, engineer, university of professor or other professionals, 4: doctor, lawyer, high

school or primary school teacher, 5: accountant, nurse, computer programmer or other technical staff, 6: ordinary staff or worker (such as, secretary, bank clerk, or librarian), 7: ordinary staff or worker in business or service (such as, salesperson, agent, cook, barber or cosmetologist), 8: technical worker (such as, driver, electrician, plumber, or mechanist), 9: ordinal worker (such as, porter, or production line worker), 10: farmer, herdsman, or fisherman, 11: elementary worker (such as, cleaner, guard, housekeeper, or sanitation worker), 12: self-employed worker, 13: unemployed or laid-off worker, 14: others (please specify). According to the EGP class schema (Erikson and Goldthorpe, 1992; Goldthorpe, 2016), these 14 categories were coded into a five-version class schema using the higher of the parents' occupation as parental (family) class position¹⁷:

1. The professional and managerial salariat (classes I and II, 9.63%);
2. Routine non-manual (classes IIIa and IIIb, 7.55%);
3. Self-employed (class IV, 16.33%);
4. Manual supervisors, lower-grade technicians, skilled, semi- and unskilled manual workers (classes V, VI and VIIa, 45.86%);
5. Peasants (class VIIb, 20.64%).

Social Status Variable. China is experiencing the rapid modernization, marketization and globalization. During this process, the social stratification structure will inevitably share some similarities with western societies. Therefore, while the Goldthorpe class schema is a useful frame of reference for the analysis of China's social structure, this approach also has limitations in that it only measures and analyzes "hard" facts (i.e., occupation titles) without giving sufficient attention to subjective social stratification and how people think of themselves in the social hierarchy, nor does this approach take other factors (i.e., education, political affiliation)

¹⁷ The class schema is adapted from the well-known EGP schema commonly used for international social mobility research (Erikson, Goldthorpe and Portocarero, 1979). We coded 1-5 as salariat; 6-7 as routine non-manual; 12 as self-employed; 8 9 11 13 and 14 as manual worker; and 10 as agricultural worker (peasant, farmer or *nongmin* in Chinese).

into account. With the deepening of the market-oriented reform, China's social structure is becoming more diversified: the emergence of private entrepreneurs, the increasing role of human capital, and the development of service industry all serve to complicate the picture; in addition, education now plays an important role in the social stratification process. I wish to bring four criteria (occupational titles, education, self-rated family conditions and party affiliation) into my analyses for measuring social strata. More precisely, information on occupational titles was converted into ISCO88¹⁸ and then into the International Socioeconomic Index (ISEI) of occupational status. As for education, respondents were asked about the highest education level of child's father and mother separately and the higher rank of parents' education was used and coded into the years of education (0 = none, 6 = elementary school, 9 = junior high school, 11 = technical secondary school or technical school, 11 = vocational high school, 12 = senior high school, 15 = junior college degree, 16 = bachelor's degree and 19 = master's degree or higher). As for the parents' report of self-rated wealth, the question was designed to capture the subjective assessment of family conditions, and response was on a five-point scale (1 = very poor, 2 = somewhat poor, 3 = moderate, 4 = somewhat rich, 5 = very rich). As for party affiliation, respondents were asked to select the party membership of child's father and mother (1 = member of the Communist Party, 2 = a member of a democratic party, 3 = no party affiliation). Those respondents who answered that the child's father was the member of the Communist Party were coded as 1; all others were coded as 0 for a member of a democratic party or no party affiliation. To reduce these four variables to a small number of factors that can measure social status, factor analysis was used to generate one single score to measure social status of respondents. This is a continuous variable and higher value indicates better social status.

¹⁸ ISCO88 stands for the 1988 International Standard Classification of Occupation maintained by the International Labour Office.

3.2.2 Measures of Parenting Styles

Three dimensions of parenting - demandingness, responsiveness, and involvement - were included to have a rough comparison with four parenting styles formulated by Baumrind and subsequent researchers (authoritative, authoritarian, permissive and reject-neglecting), as well as two childrearing typologies developed by Lareau (concerted cultivation and accomplishment of natural growth). The advantage of this approach is that it is not only based on Baumrind's measurement but also the dimension of involvement was introduced to identify distinct subgroups and roughly look at how parents deliberately foster child's talents and skills and cultivate human capital. Demandingness was measured by three items, including two questions to the children (1) "Do your parents care and are they strict with your behaviour at school?" (The response categories are: "they don't care", "they do care about it but are not strict", "they are very strict about it"); (2) "Do your parents care and are they strict with your Internet access time?" (The response categories are: "they don't care", "they do care about it but are not strict", "they are very strict about it"); and one question to the parents: (3) "When having different opinions, do you usually force your child to agree with you?" (The response categories are: "yes", "no"). In these items, questions 1-2 are about *guan* behaviour, which are answered by the children, assessing parental discipline and supervision but having positive interpretations such as parental care and concern. Question 3, answered by parents, concerns firm enforcement and valuing obedience.

Likewise, responsiveness was measured by three items regarding verbal discussion or communication, dining together, and intimacy, including (1) "How often do you discuss his/her worries and troubles with this child?" (The response categories are: "never", "sometimes", "often"); (2) "How often do you have dinner with your parents?" (The response categories are: "never", "sometimes", "often"); (3) "How close are you to your parents?" (The response categories are: "not close", "not too close nor too far", "very close"). In particular, question

1 is parent-response, assessing whether parents pay attention to children's concerns and engage in regular communication. In addition, questions 2-3 are child-response. Question 2 asks about dining routine, because mealtime connection is crucial to adolescent development (Elgar *et al.*, 2013), and thus it has been identified as an essential item to measure responsiveness (Chan and Koo, 2011). Question 3 asks about intimacy with higher values representing a closer parent-child relationship.

Involvement was measured by organised leisure activities, involvement in schoolwork and parental intervention in school, namely, (1) "how much time on average did you spend on extra-curricular activities on weekends?" (The response categories are: "never or less than 2 hours", "about 2~4 hours", "more than 4 hours"); (2) "How often did your parents check up on your homework last week?" (The response categories are: "never", "one or two days", "greater than or equal to three days"); (3) "How many times have this child's parents contacted the teacher at school this semester?" (The response categories are: "never", "once", "two times or more"). In terms of multiple leisure activities, CEPS asks children about their extracurricular academic lessons (called *buxiban* in Chinese), such as general mathematics, mathematical Olympiads, Chinese writing, and English, as well as their extracurricular non-academic activities (called *xingquban* in Chinese), such as painting or drawing, calligraphy, music/musical instrument, and sports. Obviously, the former is related to schoolwork, mainly for the purpose of improving children's grades, whereas the latter is related to children's interests and hobbies. Generally speaking, the two kinds of organised activities aim for the development of children's talents, skills, and competence. Therefore, the two separate questions were converted into a single item measuring multiple leisure activities with three ordered categories, and a higher number represents more time spent on organised activities in a child's leisure. As for checking homework, this question is based on children's responses and was included mainly due to the cultural tradition that places a premium on scholarship and

education, and parents helping with homework is one of the direct ways to influence children's educational process. Similarly, this question was converted into a trichotomous variable with a higher value representing the more intense homework involvement. Moreover, we used the parent-reported frequency of parents contacting teachers at school to measure parental intervention in institutions because such behaviour can draw educators' attention to their children, and parents might request educational assistance from teachers through parent-teacher interaction.

3.2.3 Other Covariates

Control variables include several demographic traits at the individual- and family- level such as sex, children's hukou type, age, migration status, and the number of siblings. In addition, family structure was included because previous studies have found an association between family structure and parenting styles. Moreover, at the school level, several variables might be included such as boarding and non-boarding school, school type (public school, private school, private school for children of migrant workers), current ranking of the school in the local county/district (below average, average, above average), and school location (centre of the city/town, outskirts or rural-urban fringe zone of the city/town, village/small towns/rural areas). Whether these control variables will be included or not is contingent upon the research question we are aiming for and the research methods used in the specific chapter. Individual and family level control variables are defined in Table 3.2. In the subsequent chapter, the descriptive analysis will be displayed based on the control variables used in specific chapter.

Table 3.2 Control variable definitions

Variables	Definition
Male	1 if male, 0 otherwise (reference group)
Hukou type	1 if rural, 0 otherwise (reference group)
Age	Continuous variable, range from 12 to 18 (the higher, the older)
Migration	1 if migrant children, 0 otherwise (reference group)
Number of siblings	Continuous variable, range from 0 to 6 (the higher, the more)
Family structure	1 if two-parent family, 0 otherwise (reference group) ¹⁹

3.3 Analytical Strategies

3.3.1 Latent Class Analysis

The key issue for this research is to identify subgroups characterized by relatively homogeneous patterns of parenting. Latent class analysis (LCA) is a model-based approach that provides classification of individuals based on similar patterns of individual characteristics by an array of observed variables (Wang and Wang, 2020; McCutcheon, 1987; Oberski, 2016). If we measure a latent variable X with T classes, variables A , B and C are observed variables that can be either binary or polytomous, the model for LCA can be typically expressed using equation (1) as a sum of probabilities given the information in variables A , B , C , etc.

$$\pi_{ijk} = \sum_{t=1}^T \pi_{ijkt}^{ABCX} \quad (1)$$

where

$$\pi_{ijkt}^{ABCX} = \pi_{it}^{\bar{A}X} \times \pi_{jt}^{\bar{B}X} \times \pi_{kt}^{\bar{C}X} \times \pi_t^X \quad (2)$$

and π_{ijkt}^{ABCX} is the probability that a randomly selected case will be located in the i, j, k, t cell.

$\pi_{it}^{\bar{A}X}$ is the conditional probability that a case in class t of the latent variable (X) will be located

at level i of variable A , $\pi_{jt}^{\bar{B}X}$ is the conditional probability of being at level j of variable B ,

$\pi_{kt}^{\bar{C}X}$ is the conditional probability of being at level k of variable C and π_t^X is the probability

¹⁹ Family structure indicates whether children live in two-parent families (=1) or other forms of families (=0). Other forms of families include single-mother, single-father, and two-parent absent families.

of a randomly selected case being at level t of the latent variable X (McCutcheon, 1987). More generally, equation (2) can be expressed as (McCutcheon, 1987):

$$\pi_{ij\dots ml}^{AB\dots EX} = \pi_{it}^{\bar{A}X} \times \pi_{jt}^{\bar{B}X} \times \dots \times \pi_{mt}^{\bar{E}X} \times \pi_t^X \quad (3)$$

The two types of the model parameters are key to LCA model: unconditional probabilities and conditional probabilities. The unconditional probabilities, also called latent class probabilities, are the relative distribution of class membership or the proportion of individuals allocated to categories. The conditional probabilities, also called conditional item-response probabilities, describe “the likelihoods of endorsing specific categories/characteristics of the observed indicators/items given a specific class membership” (Wang and Wang, 2020, p.342). “It is noted that within each of the T latent classes the conditional probabilities for each of the observed variables sum to 1.00” (McCutcheon, 1987):

$$\sum_i \pi_{it}^{\bar{A}X} = \sum_j \pi_{jt}^{\bar{B}X} = \sum_k \pi_{kt}^{\bar{C}X} = 1$$

The parameter of unconditional and conditional probabilities for LCA can be estimated using maximum likelihood routines, such as Goodman’s maximum likelihood procedure. Clogg (1977) extended this maximum likelihood technique to polytomous data. The expected values with which we can test the fit of the latent class model can be written as (McCutcheon, 1987).

$$\check{\pi}_{ijk} = \sum_i \check{\pi}_{ijkt}^{ABCX}$$

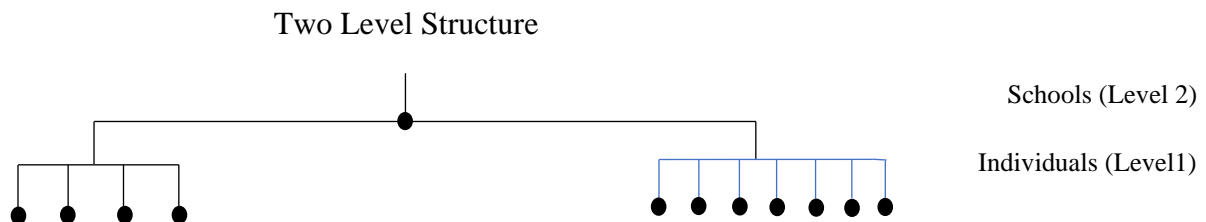
$\check{\pi}_{ijk}$ denotes the MLE joint probability, and the optimal number of classes is determined by comparing each t -class model with $(t-1)$ -class model iteratively (Wang and Wang, 2020, p.343).

The relative model fit and statistics, such as Akaike’s information criterion (AIC), Bayesian information criterion (BIC), and adjusted Bayesian information criterion (aBIC), and Lo-Mendell-Rubin likelihood ratio (LMR LR) test, adjusted Lo-Mendell-Rubin likelihood ratio

(ALMR LR) test and bootstrap likelihood ratio test (BLRT) (McLachlan, 1987, Wang and Wang, 2020, p344, Nylund *et al.*, 2007) are often used for model selection.

3.3.2 Random-intercept Model

CEPS survey uses a multi-stage design with data hierarchically structured and individuals clustered within different contextual units such as geographic units, schools and classes. Because of this, assumption of independence of residuals will be invalid if there are dependencies between individuals in the same group (area, school etc.). “In survey research, this effect of cluster sampling is well known” (Hox, 2010, p.5). For example, “respondents from the same geographical area will be more similar to each other than are respondents from different geographical areas” (Hox, 2010, p.5). This is especially the case when students are subject to the similar conditions within the same schools. It is necessary to allow for dependence or correlations among the response observed for units belonging to the same cluster.



Random-intercept model is the multilevel model that allows the intercept to vary for each level 2 group (Rabe-Hesketh and Skrondal, 2012; Heisig and Schaeffer, 2019). This model assumes that individual persons are influenced by the social groups, and ignoring the clustering generally leads to incorrect estimated standard errors and hence incorrect p-value (Rabe-Hesketh and Skrondal, 2012). Thus, extending the linear regression model, random-coefficient model introduces random intercepts to handle clustered data, as well as allows the effects of covariates to vary between clusters (Rabe-Hesketh and Skrondal, 2012). The mathematical model for random-coefficient model can be written as follow.

$$\begin{aligned}
y_{ij} &= \beta_0 + \beta_1 x_{ij} + u_{0j} + x_{ij} + e_{ij} \\
&= (\beta_0 + u_{0j}) + \beta_1 x_{ij} + e_{ij}
\end{aligned}$$

where y_{ij} is the value of y for the individual i in the group j . β_0 is the overall mean of the y . u_{0j} is the difference between group j 's mean and the overall mean. x_{ij} are covariates. β_1 is the slope of the average regression. (see Rabe-Hesketh and Skrondal, 2012; Hox, 2010). Given all covariates X_j in cluster j , it is assumed that the random effects u_{0j} have zero expectations given the covariates (Rabe-Hesketh and Skrondal, 2012).

$$E(u_{0j}|X_j) = 0$$

It is also assumed that the variance of the random intercept is homoscedastic given the covariates, which can be expressed as,

$$Var(u_{0j}|X_j) = \psi$$

Random-intercept model can be viewed as a regression model with an added level-2 residual u_{0j} . The random intercept u_{0j} can be considered a latent variable that is not estimated along with the fixed parameter β_0 and β_1 , but whose variance ψ is estimated together with the variance θ of the e_{ij} . The linear random-intercept model with covariates is the simplest example of a linear mixed (effects) model where there are both fixed and random effects (Rabe-Hesketh and Skrondal, 2012).

3.3.3 Propensity Score Matching

Propensity score matching is a new statistical technique that is useful in causal modelling when randomized experimentation is infeasible. It attempts to estimate the effect of a treatment, policy, or other intervention by accounting for the covariates that predict receiving the treatment and uses a vector of observed variables to predict the probability of experiencing the event (participation) to create a counterfactual group. Rosenbaum (2002) distinguished

between two types of bias that are frequently found in observational studies: overt bias and hidden bias. Overt bias can be seen in the data at hand, whereas the hidden bias cannot be seen because the required information was not observed or recorded (Guo and Fraser, 2014). Propensity score matching is employed to reduce the bias due to confounding variables that could be found in an estimate of the treatment effect obtained from simply comparing outcomes among units that received the treatment versus those that did not. Thus, it is particularly useful in addressing overt bias but cannot rule out hidden bias due to unobserved confounders. This method is utilised in this thesis when comparisons are made between those who attend private tutoring/hobby classes and those who do not.

Propensity score matching may be thought of as a slightly more complex method that combines the two conventional methods of regression and matching. That is, the analyst first creates propensity scores for all study participants, such that multiple characteristics are reduced to a one-dimensional score. The analyst then matches the scores between treated and nontreated cases to create a new sample. Last, the analyst performs a secondary analysis, such as regression, on the matched sample. In the second stage, many kinds of multivariate analysis may be performed (e.g., regression-type models such as the random coefficients model, multiple-group structural equation modelling, survival analysis, generalized linear models) (Guo and Fraser, 2014, p.91).

Chapter 4 Parenting Styles in Contemporary China

Previous studies on parenting have mainly focused on western countries with little systematic research on child-rearing practices adopted by Chinese parents. Based on China Education Panel Survey, this chapter constructs a new typology of parenting styles – intensive, permissive, authoritarian, and neglectful, and examines how parental occupation, education and political status affect parenting styles in China, as well as the associations between parenting styles and children’s academic, psychological and behavioural outcomes.

4.1 Introduction

Over the past few decades, scholars from many disciplines have been attracted to the study of parenting styles. Landry and colleagues (2003) suggest that parenting in early childhood plays a unique role in children’s cognitive and social development. Parenting involves nurturance, care, education, and socialisation of children (Sanders and Turner, 2018). How successfully parents interact with their children affects many areas of children’s development, including subjective well-being, mindset formation, cognitive ability, academic achievement, language acquisition, communication skills, confidence-building, self-esteem and competence during adolescence and even impacts their career trajectory into adulthood (Chan and Koo, 2011; Dornbusch, Ritter, Leiderman, and Fraleigh, 1987; Lamborn, Mounts, Steinberg, and Dornbusch, 1991; Maccoby and Martin, 1983; Sanders and Turner, 2018).

One major issue that has dominated this research field concerns the conceptualisation and measurement, namely, the typology of parenting style. Based on laboratory experiments and structured interviews, Baumrind (1971) conceptualises parenting styles into three categories, which she refers to as authoritarian, authoritative, and permissive. These parenting styles have

been widely confirmed in European-American societies (Aunola, Stattin, and Nurmi, 2000; Chan and Koo, 2011; Lamborn, Mounts, Steinberg, and Dornbusch, 1991; Maccoby and Martin, 1983). A notable recent shift is, however, the emphasis on “intensive parenting”, a term coined by Hays (1996) to describe the child-rearing activity in which parents put aside their own needs and spend a tremendous amount of time, energy, and money in raising their children. Yet, not all parents are equally intensive in their parenting practices and many are constrained by socio-economic resources available to them. As Hays observes, there are notable class differences in parenting beliefs and practices, which manifest themselves mainly between working-class and workless parents on the one side, and those in middle- and upper- class positions on the other, in Western societies. However, to date, differences in parenting styles have not been systematically investigated in Chinese society. Studies using nationally representative, high-quality, data to study intensive parenting and sources of its variation, and consequences on children’s educational and other development are even rarer. The present chapter is an effort to make a contribution to knowledge in this area.

Studying intensive parenting in China is important because it will improve our knowledge about whether and how parenting styles might differ across social contexts. Most of the existing studies on parenting styles have been conducted in Western developed countries, and few endeavours have been made to investigate parenting styles in developing countries. Over the past four decades, many developing countries including China have experienced rapid social changes. Relative to Western societies, China has seen unprecedented economic development, a sharp drop in fertility, and fast improvement in education since the mid-1990s. Compared with previous generations of parents, a significant proportion of the new generations of Chinese parents (people born in the 1970s and 1980s) have only one child and many of the children have benefited from the enormous expansion of higher education that started in the late 1990s.

The rapid socio-economic changes have also intensified inequality and competition. Many studies have documented declining social mobility, growing rigidification of the class structure and deepening division between people in different social positions in post-reform China (Wu, 2019; Yeung, 2013; Zhou and Xie, 2019; Li, 2021). Under such a background, it can only be expected that parents in China, just as parents in the Western developed countries, will want their children to have good education, and to attend elite universities if ever possible. Studies have shown that Chinese parents, imbued by Confucian ideology for learning, hold very high educational expectations for their children regardless of their own socioeconomic conditions (Li and Xie, 2020; Liu, Li, and Xie, 2020), and they place great attachment to their children's educational achievement (Chen, Huang, Lu, and Zhang, 2020; Gu, 2020). It has been suggested that in post-reform China, achievement-oriented, child-centred, intensive parenting characterised by parental involvement in children's education is more prominent than ever before (Gu, 2020).

This study conducts a theoretically-informed and methodologically-rigorous study of intensive parenting and identifies the most prevalent typologies of parenting in China. Using nationally representative data from the 2015 China Education Panel Survey (CEPS), we analyse the relationship between social position and parenting styles in China. More specifically, we assess how parenting styles are related to parents' social class, education, and political affiliation. In doing so, we hope to gain a deeper insight into the socioeconomic drivers in parenting styles. In Lareau's classic study of the impact of class on family life and child-rearing, she finds that middle-class parents are actively engaged in a purposeful, goal-oriented *concerted cultivation* style of parenting whereas working-class parents adopt a more *laissez-faire*, negligent *accomplishment of natural growth* style of parenting (Lareau, 2003). This raises the question of whether class position is as strongly linked to parenting style in China as it is in the western

societies and whether Lareau's qualitative findings can be corroborated by using large-scale nationally representative survey data in China. While class, education and incomes are commonly found as family resources in international (including Chinese) research, we also seek to understand the role of political status as indicated by affiliation with the Communist Party of China (CPC) in parenting style, which is a quite unique Chinese characteristic. We thus seek to test the empirical correlates of parenting styles in terms of both common and unique features of social stratification in parenting.

4.2 Literature Review

4.2.1 Conceptualising Parenting Styles

Parenting styles and their prototypes have been extensively studied by child development psychologists since the 1960s. The first detailed study on parenting style was Baumrind's (1971) seminal work, which proposes three parenting configurations: "authoritative", "authoritarian", and "permissive". Authoritative parents, according to Baumrind, establish and firmly enforce rules and standards for their children's conduct. They value autonomous self-will and disciplined conformity, use reason and power to achieve objectives, encourage verbal give-and-take and recognise the rights of both parents and children. Authoritarian parents, in contrast, shape, control, and evaluate the child's behaviour and attitudes according to a set of standards. They value obedience and adopt punitive measures to handle opposing viewpoints and discourage verbal communication. Finally, permissive parents tend to make few demands on their children and behave in a nonpunitive, acceptant and affirmative manner toward the child's impulses, desires and actions (Baumrind, 1971; Dornbusch, Ritter, Leiderman, and Fraleigh, 1987).

Baumrind's research was based on observations made in laboratory and home settings, and on structured interviews with parents. Maccoby and Martin (1983) advance Baumrind's research by viewing parenting styles as a combination of two orthogonal dimensions of responsiveness and demandingness. Cross-cutting the two dimensions creates a fourfold typology. These are: (a) authoritative parenting, characterised by high levels of demandingness and responsiveness, (b) authoritarian parenting, characterised by high levels of demandingness but low levels of responsiveness, (c) indulgent parenting, characterised by low levels of demandingness but high levels of responsiveness, and (d) neglectful parenting, characterised by low levels of demandingness and responsiveness. A primary difference between indulgent parenting and neglectful parenting is that indulgent parents are at once lenient and committed to their children whereas neglectful parents often neglect their childrearing responsibilities (Baumrind, 1991a; Lamborn, Mounts, Steinberg, and Dornbusch, 1991).

Maccoby and Martin's (1983) research has stimulated fruitful discussions on parenting styles. Subsequent studies have identified three or four parenting styles that correspond fairly closely to those proposed by Baumrind or Maccoby and Martin (Chan and Koo, 2011; Dornbusch *et al.*, 1987; Lamborn *et al.*, 1991). However, a major criticism of Baumrind and subsequent researchers was on their overly rigid two-dimensional model (Greenspan, 2006). Becker (1964) argues that it may be important to consider at least three general dimensions when looking at parents' behaviour and he introduces a third dimension, which he labels "anxious involvement versus calm detachment". Parenting style, according to Becker, can be thought of as a combination of warmth, control, and emotional involvement. The dimension of emotional involvement encompasses high emotionality in relation to the child, babying, protectiveness, and solicitousness for the child's welfare. Becker thus puts forward a notion of overprotective

parents, who are high on warmth and control and who show more emotional involvement than other types of parents.

Parenting styles evolve with time. Baumrind's study was conducted mainly in the 1960s. Perhaps the most influential observers of the changing parenting practices are two American economists - Doepke and Zilibotti (2019) - who note that in sharp contrast with the permissive parenting that prevailed in the 1970s, intensive parenting has become widespread across a number of industrialized countries over the last three decades, characterized by a heavily involved, time-intensive and controlling approach to child-rearing. In intensive parenting, the time parents spend on interacting with their children has risen substantially in the United States since the 1970s, mainly on education-oriented activities such as helping with homework. In this style of parenting, there is a growing desire of parents to have full control of their children and push their children to become earlier achievers.

However, few studies have investigated intensive parenting and its social distribution due to the inability of the two-dimensional model (demandingness and responsiveness) to identify intensive parents who do not fit neatly into Baumrind's predefined categories. Pulkkinen (1982) underscores the importance of parental involvement and uses four parenting involvement items to distinguish child-centred parenting consisting of parents' sustained interest in and control of children's activities, trust, warmth, advice, and consideration of their opinions from parent-centred parenting which deals with the child in a more haphazard way. This points to the need to encompass parental involvement in constructing the measure of intensive parenting.

4.2.2 Class and Parenting Styles

Sociologists from the perspective of social stratification generally focus on how social structure contributes to the formation of parenting styles. Kohn (1959) was among the first to indicate that social classes shape the values of parenting. Classes vary in value orientations, in aspirations for life goals and in socioeconomic resources to reinforce the values and aspirations. More specifically, middle-class parents place a higher value on self-direction whereas working-class parents adhere more to conformity and obedience (Kohn, 1959, 1976, 1977). The parenting values and orientations are rooted in different occupational conditions. The working-class workplace is hierarchical, structured and routinised. Thus, working-class mothers tend to use physical punishment and emphasise conformity to rules (Kohn, 1977, p.95) whereas the working conditions of the middle class are more flexible, requiring self-motivation, collaboration, and articulated communication among colleagues. Self-control, curiosity, creativity and collaboration seem more necessary and essential to middle-class parents who then bring some of the essential features in their working environment to their child-rearing practices (Kohn, 1959).

In a ground-breaking ethnographic study, Lareau (2003) argues that middle-class and working-class parents adopt different strategies and habitus of family life, and she dubs the disparities as “concerted cultivation” and “accomplishment of natural growth”. According to Lareau, middle-class parents actively foster their children’s talents, skills, and social competence by virtue of organised leisure activities, language use and intervention in institutional settings. By contrast, working-class (and workless) parents taking the natural growth approach are less involved in the children’s activities, as they tend to use short sentences, simple words, and even direct threats of physical punishments due to lack of a requisite vocabulary and other resources as typical of their life situation.

Lareau's evidence is based on a small sample of 12 families, yet her findings on class-lined differentials of parenting styles have gained wide recognition and have been verified by quantitative studies using national representative data. For example, Baker and Barg (2019), drawing on data from the Millennium Cohort Study in the UK, show that higher class parents place more emphasis on 'thinking for self' than obedience than do their peers employed in routine manual occupations. Similarly, in a paper based on the Youth Panel of the British Household Panel Survey, Chan and Koo (2011) show that authoritative parenting is more prevalent in professional-managerial households. With regard to engagement with teachers, Li, Savage, and Pickles (2003) find that middle-class parents are around 5 times as likely to join the parent-teacher association (PTA) in Britain as are their working-class peers, and the same is found in France in that working-class parents are less likely to serve as parent representatives than are their middle-class peers (Barg, 2019).

4.2.3 Beyond Class: Education and Political Affiliation

Over and above class, there are other social-structural attributes such as education and political affiliation which shape parents' knowledge, beliefs, values, and goals about childrearing and which in turn impact on parenting styles and political status can be assumed to play a more salient role in China than in western countries due to the predominant leadership position held by the CPC.

Previous research has shown a close link between parents' education and parenting styles. Drawing on a large sample of high school students in California, Dornbusch *et al.* (1987) show that highly-educated parents tend to adopt less authoritarian and permissive styles and more authoritative parenting. In addition to parenting styles, researchers find that education is

positively related to parental time spent with children. Using data from the American time use survey, Guryan *et al.* (2008) find that highly educated parents spend more quality time with their children and are more effective in enriching their children through face-to-face interaction. Highly-educated parents view time spent with children as an essential investment in human capital. Maternal education is particularly related to the quality time mothers spend with their children, and more highly educated mothers tend to spend more time reading to their children and less time watching television with them (Timmer, Eccles and O'Brien, 1985).

Apart from parental education, research has also shown that political party affiliation impacts upon parenthood. Supporters or members of a political party tend to adopt specific viewpoints, attitudes, and behaviours. Studies have shown that political party affiliation and family life interact in the USA. Liberals are less likely than conservatives to report that their parents adopt harsh and punitive parenting practices (Adorno *et al.*, 1950). Drawing on the Pew Research Center's Gender and Generations Survey, Elder and Greene (2016) find that Democratic fathers embrace less authoritarian and more egalitarian attitudes towards childrearing and are more engaged in the day-to-day care of their children than are their Republican peers who are more likely to possess authoritarian and traditional views about parenting, and to stress obedience over independence and self-reliance.

One study by Kraaykamp and Nieuwbeerta (2000) examines the effect of parental party affiliation on children's high-culture participation in the former socialist countries of Eastern Europe. The authors argue that in the communist era, political power plays an important role in the redistribution process. Nearly all the reallocation of income, goods, and power take place as a result of the dominant position of the ruling Communist party. They find that respondents are more likely to participate in high-cultural activities including reading, using libraries, going

to museums and plays, and listening to classical music at home if they have a parent who has been a member of the communist party in Bulgaria and Slovakia. They also show that parental communist party membership plays an indispensable role in explaining gaining access to high culture both directly and indirectly through parental cultural resources. The commonality of state socialist countries is the role played by the Communist party which assumes paramount power in society. This was the case in the Soviet bloc and may still be the case in China today even though it has a market-oriented economy.

4.2.4 Parenting in Chinese society

Fostering academic achievement is perhaps one of the most prominent features of Chinese parenting. Deeply influenced by Confucianism and the imperial examination system, Chinese families have had a long tradition of attaching great importance to children's education as a means of achieving upward social mobility (Liu, Jiang, and Chen, 2020; Zhu and Chang, 2019; Lin and Fu, 1990). Even though such mobility was very limited, the imperial examination system created beliefs among peasants in the possibility of promotion to the gentry by means of classic education (Fei, 1946). Thus, education was considered a family duty, and parents believed that they had the obligations and responsibilities to help children succeed in education (Huang and Gove, 2015). Even today, the traditional values that place a high premium on education and academic achievement remain powerful. These cultural beliefs are likely to convince Chinese parents that children's success would hinge on educational achievement, and the expected role for Chinese adolescents is to "study hard, score highly on entrance examinations and bring glory to the family" (Yi, 2013, p. 4).

Another aspect of Chinese parenting is the use of strict control (Zhu and Chang, 2019; Wu, 2012). Comparative studies indicate that Chinese parents are more restrictive and controlling

than are Caucasian-American parents (Chiu, 1987; Kelley and Tseng, 1992; Lin and Fu, 1990). Due to a particular cultural system, Chinese children do not interpret parental strictness and control as parental hostility, aggression, mistrust or dominance. They tend to perceive parental strictness and control as an indication of parental concern, caring or involvement (Chao, 1994). In Chinese, parental control is called *guan*, with a very positive connotation, such as “caring for”, “loving”, and “governing” (Chao, 1994). The concept of *guan* is rooted in Confucian philosophy, which defines the caregiving role in terms of responsibility and involvement. The Confucian principle requires that parents shoulder the responsibility to teach, discipline, and govern. Parents who failed to practise *guan* would be viewed as negligent and uncaring (Chao, 1994; Wu, 2012).

The vast social and economic changes that have taken place in China in the past few decades have exerted a profound impact on family life and parenting practice. Such socio-economic transformations as marketisation, economic inequality, education expansion, and persisting rural-urban division will have influenced parenting practice in different ways. First, the transition from the planned economy to the market-oriented economy promotes a shift from traditional to modern parenting values. The market-oriented socioeconomic environment rewards creativity, initiative-taking, and competitiveness, altering the perception of obedience and humbleness, and inducing parents to be more inclined towards a democratic parenting style favouring children’s individuality, originality and competition (Wang, 2014). Parents in China are now increasingly encouraged to raise children in a competitive way in which children learn to adapt to an ever-intensive market competition via enhanced aspiration, motivation and self-direction reinforced by human and cultural capital (Chen, Bian, Xin, Wang, and Silbereisen, 2010).

Second, China's income inequality has grown in the last three decades (Xie and Zhou, 2014). Increased inequality would arouse a heightened sense of anxiety among Chinese parents (Lei, 2014). Driven by the 'loss aversion' mentality (Kahneman, 2011), Chinese parents, just like parents in developed countries, would use whatever socio-economic-cultural resources at their disposal to help their children to outcompete others and climb up the social mobility ladder. For example, using World Values Survey, Doepke and Zilibotti (2019) find that income inequality is positively related to the share of parents valuing hard work in children. They argue that in highly unequal societies, parents consider hard work as the most important value. Such a belief may induce parents to invest more time and effort in pushing their children towards achievement.

Third, parents adjust their parenting styles in response to the incentives provided by the school system. The role of high-stake examinations and fierce competition in the educational system may help explain why Chinese parents are increasingly adopting achievement-oriented intensive parenting, as reflected in the ever-greater investment in terms of time, effort and money. For example, in order to improve their children's chances of gaining admission to an elite university, Chinese parents not only spend a lot of time helping children with their homework but also spend a lot of money enrolling children in expensive private tuition courses (Capobianco and Best, 2020; Chen and Uttal, 1988; Pan, Gauvain, Liu, and Cheng, 2006; Doepke and Zilibotti, 2019). Until recently, classrooms in Chinese schools were filled with students in the evenings and during weekends, with commercial organisations recruiting existing teachers to do cram teaching and making huge profits, which added a great deal of pressure to students, brought a heavy financial burden to parents, and much exacerbated the social inequality between the rich and the poor.

Finally, China is a vast country with a deep-rooted rural and urban division as institutionalised by the household registration system (*hukou* in Chinese). The system was initiated in the 1950s and has served to separate urban and rural sectors like ‘heaven and earth’ (Treiman, 2012). In the more recent past, social transformation has taken a greater pace in urban areas in terms of economic reforms and exposure to western culture. We can thus expect urban parents to be less adherent to traditional values that emphasise parental control and strictness than their rural peers. For example, based on semi-structured interviews of 328 urban parents, Lu and Chang (2013) observe that urban parents tend to adopt authoritative parenting, valuing child-centred, egalitarian, and warm-oriented practices. Likewise, analyses of data from a survey conducted in two Chinese cities (Beijing and Zhuhai) reveal that urban Chinese parents are more likely to adopt democratic (high in responsiveness and low in demandingness) or authoritative parenting rather than authoritarian or neglectful parenting (Wang, 2014). Research among junior high school adolescents in a middle-sized city and surrounding rural areas in northern China has shown that urban children report higher levels of parental warmth and encouragement of independence and lower levels of parental control than their rural counterparts (Chen, Bian, Xin, Wang, and Silbereisen, 2010). In light of this, we can say that the rural-urban divide greatly influences parenting styles in China. However, few studies have simultaneously compared the parenting styles of rural and urban children using nationally representative data, a lacuna we wish to fill in the present study.

4.3 Data, Measures, and Methods

4.3.1 Dataset

The data for this study are taken from the second wave of the China Education Panel Survey (CEPS, 2014-2015). The survey adopts a multistage design with probability proportional to size (PPS), starting with two cohorts – the 7th and 9th graders in the 2013-2014 academic year.

The baseline survey randomly selects a school-based, nationally representative sample of approximately 19,487 students (10,279 7th and 9,208 9th graders) in 438 classes of 112 schools in 28 county-level units in mainland China. In the 2014-15 academic year, the follow-up survey tracked 10,279 students in grade 7 at the baseline survey, and 9,449 students of grade 8 were successfully reinterviewed, with a follow-up rate of 91.9%. The survey gathers detailed information on parent-child interaction, childhood experience, extra-curricular activities, and parent-teacher interactions. The questions on such items form the basis for identifying parenting style typologies in this study.

The analysis was based on a sample of 9,449 students (5,097 rural and 4,352 urban students) aged 12 to 18 in the 2014-2015 academic year. The survey also administers 5 different questionnaires to the sample students, parents, form masters who are in charge of a class, main subject (Chinese, Mathematics, and English) teachers, and school administrators. Our data were derived from both students' and parents' panels. We created a merged dataset that matches students to their parents. After removing cases with missing values, the final sample was reduced to 9,226 cases, including 4,963 rural and 4,263 urban children.

4.3.2 Measures

Parenting Styles. In order to identify intensive parenting in contemporary China, three dimensions of parenting – demandingness, responsiveness, and involvement - were included. The major differences among the three dimensions are that demandingness emphasises the way in which parents teach, discipline, or control their children; responsiveness emphasises loving care and meeting the basic needs of children; and involvement is used to identify parents who are actively involved in children's education and participate in various organised activities by fostering, promoting, developing children's talents or, when necessary, interfering with or even intruding into children's school life.

Demandingness was measured by three items, including two questions to the children (1) “Do your parents care and are they strict with your behaviour at school?” (The response categories are: “they don’t care”, “they do care about it but are not strict”, “they are very strict about it”); (2) “Do your parents care and are they strict with your Internet access time?” (The response categories are: “they don’t care”, “they do care about it but are not strict”, “they are very strict about it”); and one question to the parents: (3) “When having different opinions, do you usually force your child to agree with you?” (The response categories are: “yes”, “no”). Likewise, responsiveness was measured by three items regarding verbal discussion or communication, dining together, and intimacy, including one question to the parents (1) “How often do you discuss his/her worries and troubles with this child?” (The response categories are: “never”, “sometimes”, “often”); and two questions to the children (2) “How often do you have dinner with your parents?” (The response categories are: “never”, “sometimes”, “often”); (3) “How close are you to your parents?” (The response categories are: “not close”, “not too close nor too far”, “very close”). Finally, involvement was measured by time spent on organised leisure activities, time spent on schoolwork and parental intervention in school, namely, two questions to the children (1) “how much time on average did you spend on extra-curricular activities on weekends?” (The response categories are: “never or less than 2 hours”, “about 2~4 hours”, “more than 4 hours”)²⁰; (2) “How often did your parents check up on your homework last week?” (The response categories are: “never”, “one or two days”, “greater than or equal to three days”); and one question to the parents (3) “How many times have this child’s parents contacted the teacher at school this semester?” (The response categories are: “never”, “once”, “two times or more”).

²⁰ CEPS asks students “how much time on average did you spend on extracurricular activities” including, “on private tutoring” and “on hobby classes.” We added up the two items and generated our score for the time spent on extracurricular activities.

Family socioeconomic context. Family socioeconomic context is captured by measures on parental class, education, and political party affiliation. Following standard practice in class analysis on China (Wu and Treiman, 2007; Zhao and Li, 2019; Li, 2021), we adopt a five-way schema suitable for studying social stratification in China: higher and lower levels of professional and managerial salariat (classes I and II), routine non-manual workers (class III), self-employed with or without employees (class IV), lower-grade technician, skilled and unskilled manual workers in industry and commerce (classes V, VI and VIIa), and agricultural workers (class VIIb). We used the ‘dominance approach’ (Erikson, 1984) in defining the social class of the family by using father’s or mother’s class position whichever is higher. Parental education is based on the same approach, using the higher level of either parent’s educational attainment, which was then coded into 3 categories, including less than high school, high school or junior college, and bachelor’s degree or higher. Political party affiliation was based on the affiliation to the Communist party of at least one parent, a dichotomous variable taking the value of 1 if either parent is a member of Communist Party of China (CPC) and 0 otherwise.

Controls. Building on prior studies and the Chinese social context, we controlled for several demographic and socioeconomic variables that are likely to have an impact on parenting styles: gender, *hukou*, age, ethnicity, migration status, number of siblings, family structure and family economic condition. Gender was measured by children’s sex (male=1, female=0). *Hukou* was measured by the household registration type (rural=1, urban=0). Ethnicity was measured by ethnic identity (minority ethnic groups=1, Han=0). Migration was measured by children’s migration status (migrant=1, local=0). Number of siblings was measured by the number of the student’s brothers and sisters.²¹ Family structure indicates whether the student lives in two-parent (=1) or other forms of families (=0). Finally, we incorporate self-rated family economic

²¹ In the overall sample, 44.3% of the students are singletons (the only child in the family). In the rural sample, only 26.5% of the students are only children as compared with 65.1% in the urban sample.

condition which ranges from “very rich”, “fairly rich”, “average”, “quite poor” and “very poor”. We created a three-category variable by coding “high income (very rich and fairly rich)” as “1”, “medium income (average)” as “2”, and “low income (quite poor and very poor)” as “3”.

Outcome variables. Three sets of outcome variables were examined: academic performance, psychological well-being, and delinquent behaviour. Academic performance was measured by students’ midterm test scores in Chinese, mathematics, and foreign language in the fall semester of the 2014-2015 academic year. This information was collected from official school transcripts. Psychological well-being was based on children’s responses to ten items concerning the frequency of having the following negative feelings in the last week. The sub-questions included “feeling blue”, “too depressed to focus on anything”, “unhappy”, “not enjoying life”, “having no passion to do anything”, “sad or sorrowful”, “nervous”, “excessive worry”, “feeling something bad will happen”, and “too energetic to concentrate in class”. The response categories are always, often, sometimes, seldom, and never. After reversing the coding, we added up the scores of the ten items and generated an indicator in the range 0-40, with higher values indicating better psychological well-being. The delinquent behaviour measure included ten items that assess the frequency of such behaviour as “cursing or saying swearwords”, “quarrelling with others”, “having a fight with others”, “bullying the weak”, “having a violent temper”, “unable to concentrate on one thing”, “skipping classes, being absent or truanting”, “cheating in exams”, “smoking or drinking alcohol”, and “going to net bars or video arcade”. Each of these questions has 5 options, with 0 as never and 4 as always. The delinquent behaviour measure ranges from 0 to 40 with higher values indicating more delinquent behaviour. We standardized the three outcome variables to have a mean of zero and a standard deviation of one.

The descriptive statistics for all variables in the overall sample and in the urban and rural subsamples are shown in Table 4.1

Table 4.1 Descriptive statistics for the independent variables and controls in the overall, urban and rural samples: means (SDs) or percentages

	Overall sample (n=9226)	Urban children (n=4263)	Rural children (n=4963)
Parental class, %			
Salaried	9.7	18.0	2.5
Routine nonmanual	7.6	12.2	3.8
Self-employed	16.5	18.0	15.2
Manual workers	45.9	46.0	45.7
Agricultural workers	20.4	5.9	32.9
Parental education, %			
First degree or higher	12.5	24.9	1.81
High school or junior college	31.2	40.9	22.83
Less than High School	56.4	34.3	75.36
Parental party affiliation, %			
CPC member	16.5	26.1	8.3
Non-CPC member	83.5	73.9	91.7
Covariates			
Gender,%			
Female	48.1	49.3	47.1
Male	51.9	50.7	52.9
Age	13.6 (0.7)	13.4 (0.6)	13.7 (0.8)
Number of siblings	0.7 (0.8)	0.4 (0.7)	0.9 (0.8)
Ethnicity,%			
Ethnic minority groups	8.7	8.1	9.3
The Han	91.3	91.9	90.7
Migration status, %			
Migrant children	19.5	15.1	23.3
Local children	80.5	84.9	76.7
Family structure,%			
Two-parent family	79.6	82.6	77.1
Nonintact	20.4	17.4	22.9
Self-rated family economic condition,%			
High income	6.3	8.7	4.2
Medium income	72.7	78.7	67.6
Low income	21.0	12.6	28.2

Note: Further analysis shows that the rural/urban differences for all variables in the table are statistically different at the 0.05 level or above.

Source: The China Education Panel Survey (CEPS, 2014-2015) (the same for all tables/figures in this thesis).

4.3.3 Analytic Plan

The key issue for this research is to identify groups characterized by relative homogeneity in patterns of parenting. We began by using latent class analysis (LCA) to identify typologies of parenting styles. LCA is a model-based approach that provides the classification of individuals

based on similar patterns of individual characteristics by an array of observed variables (Wang & Wang, 2020; McCutcheon, 1987). LCA posits that the phenomenon of interest might be considered as a categorical latent variable instead of a continuous one.²²Next, we explore the association between measures of family socioeconomic status and parenting styles using multinomial logistic regression. This model is particularly useful in handling nominal outcomes. The model includes basic demographic characteristics and parental class, education, and political party affiliation whilst controlling for confounding factors to examine whether parenting styles vary between social groups. Finally, to answer my third question, we use the regression with robust standard errors procedure accounting for clustering because students are nested within schools, and it is necessary to allow for dependence or correlations among the response observed for units belonging to the same school.

4.4 Results

4.4.1 Identifying Typologies of Parenting Styles.

We use latent class analysis (LCA) to identify the typology of parenting styles among Chinese families. To determine the optimal number of groups, we started by one latent class and compared the model fit indices and statistics iteratively. Table 4.2 shows the degrees of freedom, test statistic G^2 , p -value of the Lo-Mendell-Rubin likelihood ratio (LMR LR) test and p -value of the adjusted Lo-Mendell-Rubin likelihood ratio (ALMR LR) test and information

²² The model can be specified by

$$\Pr(y_{ij} = a_s | c) = \frac{\exp(V_{ijc}^s)}{\sum_{t=1}^{S_i} \exp(v_{ijc}^t)}$$

where units are assumed to belong to one of C discrete classes $c = 1, \dots, C$. The prior probability that a unit j is in class c , π_{jc} , is a model parameter. If unit j is in class c , the conditional response probability that item i takes on the values a_s , $s = 1, \dots, S_i$, is modelled as a multinomial logit.

criterion indices. The G^2 statistic expresses the correspondence between observed and predicted response patterns. The significance test is in favour of the four-class model because the p -value of both the LMR LR and the ALMR LR tests that compare the four-class model with the five-class model becomes statistically insignificant ($p \geq 0.05$) in the five-class model, suggesting no more significant improvement in model fit by including an additional class into the model and thus the four-class model is clearly preferred. Also, the value of the information criterion suggests that the four-class approach is superior as it has the lowest value of Bayesian Information Criteria (BIC). Thus, considering the model fit as well as the meaning from the interpretation of latent class membership classification, we decided to adopt the four-class model.

Table 4.2 Indices of fit for LCA models with one through five classes

Number of classes	df	G^2	p for LMR	p for ALMR	BIC
1	13049	10730.93	-	-	147180.25
2	13059	7439.12	0.0000	0.0000	143514.05
3	13044	6797.19	0.0000	0.0000	143001.71
4	13025	6384.87	0.0000	0.0000	142765.92
5	13006	6210.76	0.2148	0.2168	142767.25
6	12996	6144.04	0.0109	0.0112	142781.12

Note: -, not applicable

When individuals were classified into a four-class membership, typologies of parenting styles were defined according to the pattern of conditional item-response probabilities. Table 4.3 reports the estimated relative size and the conditional probability of the latent classes. In terms of the relative size, the four latent classes account for 17, 38, 33, and 12 per cent of the sample, respectively. The proportions of latent classes 2 and 3 are higher among the urban than the rural subsamples, whereas the proportions of latent classes 1 and 4 are higher among the rural respondents. Turning to the conditional item-response probabilities, parents in latent class 1 appear to be very strict with children's behaviour, set strict time limits for Internet access, and may even force children to obey; however, they do not communicate much with their children,

nor do they seem to have very close and intimate relationships with their children, reflecting authoritarian parenting. Parents in category 2 often discuss children’s worries or troubles, dine and have close relationships with their children, but exercise rather limited parental discipline and control. This category is labelled as permissive parenting. Category 3 is associated with “high demandingness”, “high responsiveness”, and “high involvement”. These parents are achievement-oriented, drive their children to various extracurricular activities and interfere much in their children’s school life, such as checking homework or contacting teachers. This parenting style is called intensive parenting. The scores for latent class 4 are low on all items. Parents in this category rarely set rules, and they do not often have meals or talk with their children: they do not have close relationships with the children and are rarely involved in the education or extracurricular activities for them, a parenting style which is rather neglectful. The conditional item-response probabilities are shown in Fig4.1. We also use two dimensions of demandingness and responsiveness to identify four traditional parenting styles (authoritarian, permissive, authoritative and neglectful) and compare the two sets of outcomes. The results are displayed in Table A.2 and Table A.3 in Appendix 2.

Table 4.3 Estimated relative size and conditional probability of the latent classes

	1	2	3	4
Relative size in total samples	0.168	0.378	0.329	0.124
Relative size in rural subsamples	0.220	0.352	0.277	0.150
Relative size in urban subsamples	0.108	0.408	0.389	0.094
Parents are very strict with children’s behaviour	0.566	0.062	0.624	0.062
Parents set strict time limits for Internet access	0.817	0.359	0.742	0.331
Parents force children to obey	0.393	0.276	0.275	0.357
Parents often discuss child’s worries or troubles	0.214	0.298	0.554	0.105
Parents and children often have dinner together	0.545	0.835	0.906	0.559
Children are very close to parents	0.420	0.480	0.707	0.181
Children spend more than 4 hours on organised leisure activities on weekends	0.044	0.092	0.185	0.026
Parents often check up on homework	0.181	0.231	0.633	0.038
Parents often contact teachers at schools	0.538	0.447	0.672	0.296

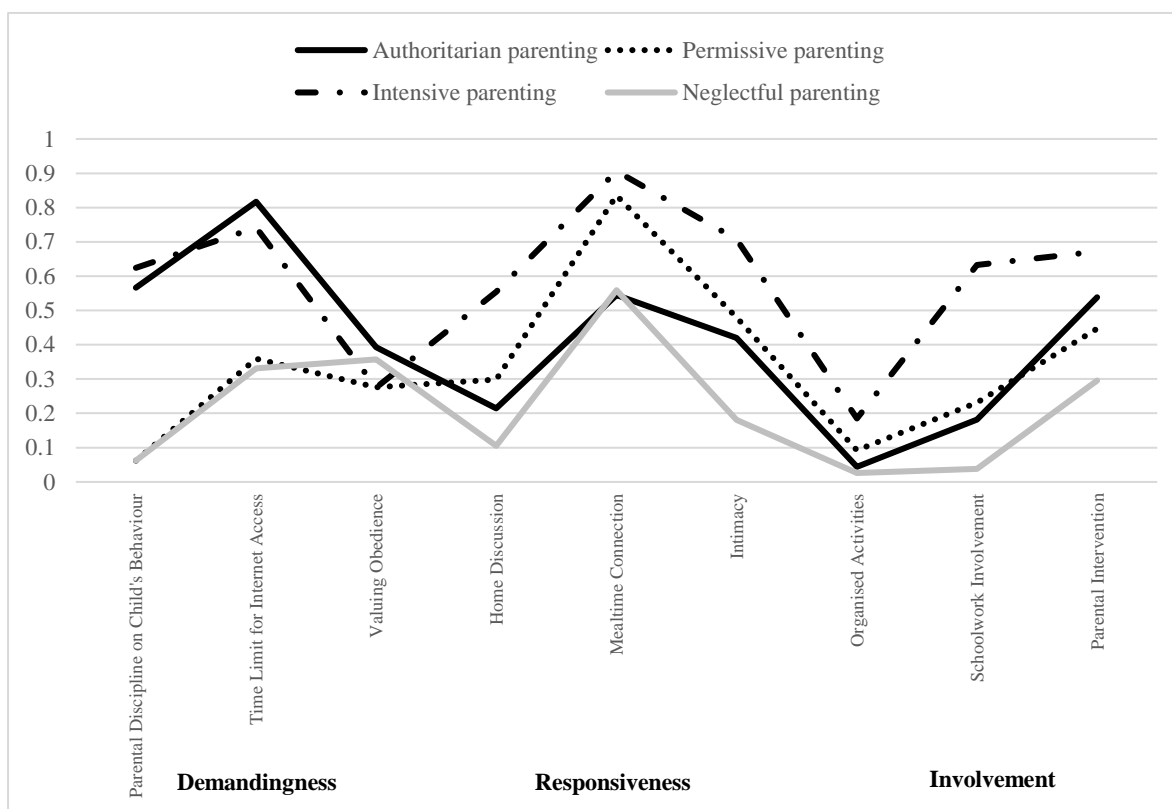


Figure 4.1 Conditional item-response probabilities for four parenting styles

4.4.2 Descriptive Analysis

In Table 4.4, we cross-tabulate parenting styles with parents' class, education, and parental party affiliation. We see a clear gradient of social class in parenting style, with intensive parenting being more common among the salariat (50 per cent) or routine non-manual (40 per cent) than among the three lower classes (self-employed, manual and agricultural workers at 36, 29 and 29 per cent respectively). On the other hand, neglectful parenting is more common amongst the lower classes. Interestingly, the gradients of parenting styles by parents' education and CPC membership are similar to those by class, with intensive parenting being more common among the highly-educated and those with CPC memberships, reflecting the close association between class, education and CPC status in China. Likewise, neglectful parenting is more common among those in low class positions, poorly-educated and non-CPC.

Table 4.4 Distribution of parenting styles by parental class, education, and CPC membership (row per cent within each variable)

	Parenting Styles			
	Authoritarian	Permissive	Intensive	Neglectful
Parental class				
Salariat	8.5	38.1	49.7	3.7
Routine non-manual	12.8	40.9	39.7	6.7
Self-employed	13.3	41.9	36.0	8.8
Manual worker	18.0	37.9	28.7	15.5
Agricultural worker	22.7	33.3	29.2	14.8
Parental education				
Bachelor's Degree or Higher	9.0	39.5	47.9	3.6
High school / Junior College	12.9	40.3	37.5	9.3
Less than High School	20.7	36.1	27.0	16.2
Parental CPC membership				
CPC member	11.8	36.2	46.0	6.0
Non-CPC member	17.9	38.1	30.3	13.7

4.4.3 Socioeconomic Differences in Parenting Styles: The Overall Sample

To further explore how parenting styles differ between social groups, we conducted a multinomial logistic regression. We use intensive parenting as the reference category. The data are shown in Table 4.5. Here we notice several important features. First, controlling for all the other variables, rural children are more likely than urban children to report authoritarian rather than intensive parenting, which indicates that rural parents are more likely than urban parents to adhere to traditional values that emphasize parental strictness and control, a pattern which is well expected. Secondly, turning to family socioeconomic contexts, we find that parental class, education, and CPC membership all have impacts on parenting styles. Thus, compared with those in the professional and managerial salariat, manual workers are more likely to adopt authoritarian, permissive, and neglectful (rather than intensive) parenting. Agricultural workers are most likely to adopt neglectful parenting. Furthermore, compared with parents with university degrees, those with education below high school are more likely to be authoritarian or neglectful rather than intensive. Finally, political party affiliation impacts on parenting styles in contemporary China, and parents who are CPC members are more likely to

adopt intensive (rather than neglectful and permissive) parenting. All this makes perfect sociological sense and suggests that parenting styles in China follow a strict hierarchical order.

Table 4.5 Coefficients of multinomial logistic regression models predicting parenting styles (total sample, n=9226)

	Authoritarian versus intensive	Permissive versus intensive	Neglectful versus intensive
Rural	0.583*** (0.080)	-0.025 (0.060)	0.147+ (0.085)
Key independent variables			
Parental class ^a			
Routine non-manual	0.390* (0.185)	0.175 (0.115)	0.396 (0.252)
Self-employed	0.220 (0.167)	0.129 (0.104)	0.404+ (0.222)
Manual workers	0.489** (0.154)	0.255** (0.096)	0.943*** (0.207)
Agricultural workers	0.315+ (0.170)	0.039 (0.116)	0.571* (0.223)
Parental education ^b			
High school or junior college	-0.000 (0.141)	0.035 (0.088)	0.548** (0.193)
Less than high school	0.351* (0.146)	0.161+ (0.096)	1.007*** (0.195)
Parental affiliation with Communist party	-0.161 (0.101)	-0.244*** (0.070)	-0.373** (0.123)
Covariates			
Male	0.008 (0.067)	-0.194*** (0.051)	-0.239** (0.075)
Age	0.071 (0.049)	-0.007 (0.040)	0.293*** (0.053)
Minority	0.685*** (0.117)	0.103 (0.105)	0.608*** (0.126)
No. of siblings	0.372*** (0.045)	0.200*** (0.039)	0.401*** (0.048)
Migrant child	-0.199* (0.090)	0.215** (0.066)	0.063 (0.096)
Two-parent family	-1.472*** (0.083)	-0.392*** (0.077)	-1.612*** (0.088)
Self-rated family economic condition ^c			
Medium income	0.162 (0.153)	0.110 (0.099)	0.053 (0.176)
Low income	0.564*** (0.168)	0.132 (0.118)	0.352+ (0.191)
Constant	-1.894** (0.686)	0.223 (0.551)	-5.564*** (0.755)
Log-likelihood	-11072.429	-11072.429	-11072.429

Notes: Estimates reported as log odds.

^a Reference category is professional and managerial salariat.

^b Reference category is university degree.

^c Reference category is high income.

⁺ $p < 0.10$, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

4.4.4 Socioeconomic Differences in Parenting Styles: Rural and Urban Distinction

Next, we divide the sample by rural and urban status given the well-known discrepancies between the two sectors. The data are shown in Table 4.6. Here we find that manual workers are more likely to adopt neglectful parenting rather than intensive parenting in both rural and urban sectors. Also, most of the parameters for parents' education among rural children are non-significant, whereas parents' education significantly affects parenting styles among urban children. More specifically, urban parents with low education are more authoritarian or neglectful than those with university degrees. Parental affiliation with the Communist party does not influence parenting styles among rural children although it can significantly predict intensive parenting among urban children. The findings clearly suggest that the impact of parental CPC status on parenting styles was limited to urban sectors. In addition, we obtained important findings for the control variables. For example, we see ethnic minority groups tending to adopt authoritarian and neglectful parenting rather than intensive parenting in both rural and urban sectors, and migrant children in rural sectors being less likely to have authoritarian parents but more likely to have permissive parents in urban sectors. Children from two-parent families and with fewer siblings tend to have more intensive parenting. Parents are less likely to be permissive in urban sectors and neglectful in rural sectors when their child is male instead of female. There are many significant factors with both sectors but inter-sectoral differences are rather limited, shown only for number of siblings.

Table 4.6 Multinomial logistic regression predicting parenting styles, by rural and urban subsample.

	Authoritarian versus intensive		Permissive versus intensive		Neglectful versus intensive	
	Rural	Urban	Rural	Urban	Rural	Urban
Parental class ^a						
Routine non-manual	0.383 (0.349)	0.403 ⁺ (0.223)	0.309 (0.278)	0.136 (0.129)	0.181 (0.436)	0.519 ⁺ (0.314)
Self-employed	0.236 (0.299)	0.233 (0.211)	0.355 (0.233)	-0.010 (0.124)	0.353 (0.363)	0.264 (0.292)
Manual workers	0.548 ⁺ (0.283)	0.400* (0.192)	0.373 ⁺ (0.224)	0.225* (0.109)	0.750* (0.346)	0.993*** (0.264)
Agricultural workers	0.329 (0.288)	0.320 (0.291)	0.123 (0.229)	0.173 (0.199)	0.346 (0.352)	0.700* (0.342)
Parental education ^b						
High school or junior college	-0.654* (0.328)	0.088 (0.166)	-0.329 (0.274)	0.052 (0.097)	-0.153 (0.434)	0.549* (0.223)
Less than high school	-0.251 (0.322)	0.393* (0.182)	-0.129 (0.271)	0.092 (0.114)	0.374 (0.427)	0.876*** (0.234)
Parental affiliation with Communist party	0.038 (0.149)	-0.244 ⁺ (0.142)	0.007 (0.125)	-0.362*** (0.086)	-0.090 (0.176)	-0.551** (0.178)
Male	-0.029 (0.086)	0.103 (0.111)	-0.112 (0.074)	-0.270*** (0.070)	-0.315** (0.097)	-0.108 (0.121)
Age	0.018 (0.060)	0.172 ⁺ (0.091)	-0.036 (0.053)	0.027 (0.063)	0.257*** (0.065)	0.365*** (0.094)
Minority	0.764*** (0.156)	0.535** (0.187)	0.127 (0.157)	0.089 (0.141)	0.589*** (0.171)	0.708*** (0.193)
No. of siblings	0.301*** (0.056)	0.481*** (0.080)	0.185*** (0.051)	0.224*** (0.061)	0.254*** (0.062)	0.623*** (0.079)
Migrant child	-0.286* (0.111)	-0.076 (0.159)	0.154 ⁺ (0.088)	0.250* (0.101)	-0.065 (0.121)	0.204 (0.162)
Two-parent family	-1.394*** (0.107)	-1.511*** (0.133)	-0.216* (0.109)	-0.560*** (0.108)	-1.533*** (0.116)	-1.673*** (0.140)
Self-rated family economic condition ^c						
Medium income	0.528* (0.233)	-0.083 (0.203)	0.361* (0.170)	0.001 (0.123)	0.238 (0.249)	-0.024 (0.251)
Low income	0.904*** (0.245)	0.350 (0.248)	0.354 ⁺ (0.185)	0.085 (0.167)	0.470 ⁺ (0.263)	0.457 (0.287)
Constant	-0.369 (0.910)	-3.060* (1.234)	0.340 (0.790)	0.121 (0.847)	-4.140*** (1.033)	-6.608*** (1.292)
N	4963	4263	4963	4263	4963	4263
Log-likelihood	-6290.674	-4745.153	-6290.674	-4745.153	-6290.674	-4745.153

Notes: Emboldened figures for urban children indicate significant differences from the corresponding figures for rural children (using seemingly unrelated estimation method, *suest*, in Stata).

^a Reference category is professional and managerial salariat. ^b Reference category is university degree.

^c Reference category is high income.

⁺ $p < 0.10$, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$.

4.4.5 Parenting Styles and Child Development

Turning to the association between parenting styles and academic achievement, psychological well-being, and delinquent behaviour, we show the results of the OLS model with a robust standard error accounting for clustering in Table 4.7. Model 1 shows the negative effect of neglectful parenting on children's test scores. Model 2 shows that, compared with intensive parenting, children from authoritarian, permissive and neglectful households report significantly poorer psychological well-being, even after controlling for background variables. Moving to model 3, we note that the advantage of intensive parenting persists and children with authoritarian, permissive and neglectful parents report more delinquent behaviour than do children from intensive homes.

Table 4.7 OLS regression with a robust standard error accounting for clustering estimating the effect of parenting styles on academic performance, psychological well-being, and delinquent behaviour in the overall sample

	Model 1 Academic performance	Model 2 Psychological well-being	Model 3 Delinquent behaviour
Parenting styles ^a			
Authoritarian parenting	-0.073 ⁺ (0.040)	-0.351 ^{***} (0.036)	0.339 ^{***} (0.035)
Permissive parenting	-0.002 (0.033)	-0.140 ^{***} (0.027)	0.253 ^{***} (0.024)
Neglectful parenting	-0.340 ^{***} (0.054)	-0.400 ^{***} (0.038)	0.698 ^{***} (0.042)
Male	-0.406 ^{***} (0.026)	-0.406 ^{***} (0.021)	-0.406 ^{***} (0.022)
Rural	0.007 (0.046)	0.023 (0.028)	0.035 (0.031)
Age	-0.206 ^{***} (0.024)	-0.039 [*] (0.018)	0.053 ^{**} (0.018)
Minority	-0.220 ⁺ (0.124)	-0.083 ⁺ (0.048)	0.100 ⁺ (0.058)
No. of siblings	-0.097 ^{***} (0.024)	-0.038 [*] (0.015)	0.036 [*] (0.017)
Migrant child	-0.035 (0.067)	0.022 (0.032)	0.031 (0.039)
Two-parent family	0.071 ⁺ (0.039)	0.068 [*] (0.027)	-0.053 ⁺ (0.029)
Parental class ^b			
Routine non-manual	-0.106 [*] (0.048)	-0.008 (0.059)	0.012 (0.055)
Self-employed	-0.119 [*] (0.049)	-0.108 [*] (0.054)	0.072 (0.046)
Manual workers	-0.186 ^{***} (0.043)	0.020 (0.045)	0.004 (0.047)
Agricultural workers	-0.270 ^{***} (0.074)	-0.001 (0.053)	0.038 (0.062)
Parental education ^c			
High school or junior college	-0.268 ^{***} (0.049)	-0.030 (0.041)	0.054 (0.046)
Less than high school	-0.442 ^{***} (0.054)	-0.046 (0.045)	0.112 [*] (0.055)
Parental affiliation with Communist party	-0.040 (0.035)	-0.038 (0.031)	0.018 (0.028)
Family economic condition ^d			
Medium income	0.046 (0.043)	-0.173 ^{***} (0.044)	-0.016 (0.042)
Low income	-0.064 (0.055)	-0.260 ^{***} (0.047)	0.013 (0.048)
Constant	3.579 ^{***} (0.338)	0.863 ^{***} (0.243)	-1.227 ^{***} (0.250)
<i>N</i>	9226	9226	9226
Log-likelihood	-12138.489	-12903.159	-12638.652

Notes: ^a Reference category is intensive parenting.

^b Reference category is professional and managerial salariat.

^c Reference category is university degree.

^d Reference category is high income.

⁺ $p < 0.10$, ^{*} $p < 0.05$, ^{**} $p < 0.01$, ^{***} $p < 0.001$

In light of the patterns in Table 4.7, we rerun the OLS model estimating the relationship between parenting styles and child developmental outcomes within each *hukou* sector, with the results displayed in Table 4.8. Model 1 estimates the effect of parenting styles on academic achievement for rural children. It can be seen that compared with intensive parenting, children with authoritarian and neglectful parenting report significantly lower grades among rural children, whereas model 2 indicates neglectful parenting is associated with poor grades among urban children, whereas permissive parenting is associated with better grades among urban children compared with other three types. Models 3 and 4 show that for both rural and urban children, intensive parenting is the most beneficial for psychological well-being. Compared with intensive parenting, children from authoritarian, permissive and neglectful households report significantly lower well-being in both urban and rural sectors. Models 5 and 6 estimate the effect of parenting styles on delinquent behaviour for both rural and urban children and we note that the advantage of intensive parenting persists. Children with authoritarian, permissive, and neglectful parents tend to report more delinquent behaviour compared with children in intensive families in both rural and urban sectors.

Table 4.8 OLS regression model with a robust standard error accounting for clustering estimating the effect of parenting styles on academic performance, psychological well-being, and delinquent behaviour, by rural and urban subsample

	Academic performance		Psychological well-being		Deviant behaviour	
	Model 1 Rural	Model 2 Urban	Model 3 Rural	Model 4 Urban	Model 5 Rural	Model 6 Urban
Parenting styles ^a						
Authoritarian parenting	-0.100* (0.050)	-0.056 (0.053)	-0.327*** (0.040)	-0.414*** (0.060)	0.342*** (0.043)	0.374*** (0.055)
Permissive parenting	-0.074 (0.045)	0.076* (0.036)	-0.162*** (0.037)	-0.113** (0.040)	0.324*** (0.034)	0.183*** (0.034)
Neglectful parenting	-0.387*** (0.060)	-0.269*** (0.074)	-0.439*** (0.048)	-0.318*** (0.059)	0.747*** (0.060)	0.622*** (0.070)
Male	-0.446*** (0.035)	-0.355*** (0.028)	0.025 (0.029)	0.070* (0.027)	0.346*** (0.032)	0.262*** (0.029)
Age	-0.217*** (0.031)	-0.187*** (0.029)	-0.042* (0.021)	-0.038 (0.034)	0.043+ (0.022)	0.070* (0.027)
Minority	-0.192 (0.147)	-0.240+ (0.124)	-0.052 (0.058)	-0.128+ (0.077)	0.085 (0.071)	0.122 (0.083)
No. of siblings	-0.062* (0.027)	-0.145*** (0.030)	-0.027+ (0.015)	-0.063* (0.028)	0.018 (0.019)	0.065* (0.027)
Migrant child	-0.010 (0.088)	-0.036 (0.054)	0.060 (0.038)	-0.033 (0.050)	-0.001 (0.052)	0.079 (0.052)
Two-parent family	0.046 (0.055)	0.095* (0.040)	0.083* (0.034)	0.048 (0.046)	-0.077* (0.038)	-0.015 (0.042)
Parental class ^b						
Routine non-manual	0.039 (0.098)	-0.126* (0.057)	0.117 (0.132)	-0.037 (0.064)	-0.110 (0.142)	0.037 (0.062)
Self-employed	0.087 (0.099)	-0.170* (0.057)	-0.117 (0.116)	-0.047 (0.059)	-0.041 (0.138)	0.095+ (0.052)
Manual workers	-0.037 (0.089)	-0.181*** (0.050)	0.086 (0.105)	-0.003 (0.052)	-0.083 (0.137)	0.009 (0.051)
Agricultural workers	-0.081 (0.111)	-0.426*** (0.084)	0.047 (0.109)	0.031 (0.090)	-0.056 (0.140)	0.060 (0.082)
Education ^c						
High school or junior college	0.031 (0.108)	-0.272*** (0.047)	0.158 (0.121)	-0.058 (0.046)	0.011 (0.147)	0.046 (0.044)
Less than high school	-0.112 (0.102)	-0.481*** (0.062)	0.101 (0.126)	-0.028 (0.058)	0.083 (0.153)	0.083 (0.060)
Parental affiliation with Communist party	-0.069 (0.053)	-0.036 (0.042)	-0.039 (0.049)	-0.033 (0.043)	0.047 (0.056)	-0.001 (0.030)
Family economic condition ^d						
Medium income	-0.137* (0.063)	0.139** (0.050)	-0.190* (0.075)	-0.175** (0.056)	-0.043 (0.076)	0.008 (0.052)
Low income	-0.230** (0.080)	-0.015 (0.069)	-0.267*** (0.072)	-0.298*** (0.075)	-0.029 (0.080)	0.082 (0.068)
Constant	3.463*** (0.484)	3.216*** (0.376)	0.721* (0.330)	0.870+ (0.450)	-0.919** (0.350)	-1.483*** (0.372)
N	4963	4263	4963	4263	4963	4263
ll	-6709.806	-5368.097	-6750.493	-6124.904	-6887.728	-5731.220

Notes: Emboldened figures for urban children indicate significant differences from the corresponding figures for rural children (using seemingly unrelated estimation method, *suest*).

^a Reference category is intensive parenting.

^b Reference category is professional and managerial salariat.

^c Reference category is university degree.

^d Reference category is high income.

+ $p < 0.10$, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

4.5 Conclusion and Discussion

For decades, sociologists have been concerned with social distributions of parenting styles. This work contributes to existing knowledge of parenting styles by identifying the typologies of parenting styles in contemporary China and studying the effects of socio-economic factors on parenting styles. Our analysis is organized around four goals.

The first goal is to identify intensive parenting in China. We find that nearly a third of Chinese parents adopt intensive parenting, and this proportion is much higher in urban than in rural areas (39% and 28% respectively). Intensive parents supervise and support children and get immersed in children's education via, for example, enrolling children in various extracurricular courses, helping with, and checking, homework and even intervening in institutional settings. Influenced by Confucianism, Chinese parents are known for being obsessed with children's educational attainment. In contemporary China, the increase in inequality has been particularly pronounced. High levels of inequality make Chinese parents anxious about their children's future economic conditions and status reproduction. Moreover, the returns to higher education have increased since the 1990s (Heckman and Li, 2004). Embedded in high-stake examinations, the competition in the Chinese school system is getting increasingly fierce. Rising inequality, high returns to education and fierce competition have raised the stakes in parenting, and Chinese parents in elite positions have responded by adopting an intensive parenting practice that features heavy involvement in child-centred, achievement-oriented activities so that their children could hopefully be admitted to elite universities, thereby preserving intergenerational class stability.

The second goal is to explore how parenting styles differ by parents' class, education, and political affiliation. Our analysis supports Lareau's (2003) qualitative findings by revealing

how social class makes a difference in children's lives. We find that manual workers are more likely to adopt neglectful rather than intensive parenting compared to those in professional-managerial occupations in both urban and rural settings, suggesting that children from manual workers and peasant families are at a distinct disadvantage. Our findings have enabled us to gain a deeper understanding of class-based differences in parenting styles and how parenting styles reflect the observed patterns of social stratification that characterise the contemporary Chinese society (Ishizuka, 2019; Weininger and Lareau, 2009).

With regard to education, this study provides evidence that confirms previous research showing the educational impact on parenting (Carr and Pike, 2012; Baker and Barg, 2019; Sayer, Bianchi, and Robinson, 2004). Our results suggest that parents with lower levels of education are more likely to adopt authoritarian and neglectful parenting, which is consistent with the previous finding that education produces more liberal attitudes (Gross, 2013). Our findings also suggest that college-educated parents tend to adopt intensive parenting, consistent with findings by Cherng, Godfrey, and Rarick (2022). We also find that parental affiliation with Communist party can significantly predict intensive parenting in urban China. Given the well-known selectivity of the party membership (e.g., Bian *et al.*, 2001) and the changing composition of intellectual and technical elites of the CPC (Dickson and Rublee, 2000), one can expect CPC members to have high human capital which in turn enables them to nurture their children's academic development through extensive involvement in education, such as spending more quality time interacting with children, other parents and teachers, helping with homework and sending their children to various extracurricular activities. Our analysis clearly shows that social stratification starts with parenting practices, even more so in China than in western countries due to China's unique socio-political institutions.

The third goal was to examine the relationship between parenting styles and children's academic, psychological and behavioural outcomes. The results add to a growing body of evidence that parenting styles have a significant impact on a wide range of child outcomes. This is striking, given the negligible effect of parental class on children's psychological well-being and delinquent behaviour when the parenting style effects are controlled for. This suggests that parenting style has a significant impact on academic achievement, psychological well-being, and delinquent behaviour net of socio-economic effects. Specifically, children who characterize their parents as intensive report higher levels of well-being and lower levels of delinquent behaviour. With respect to academic achievement, where parental class is an important predictor, parenting styles also matter. The fact that children from intensive parenting homes score higher than the authoritarian and neglectful groups on academic achievement in rural China and score higher than neglectful groups on academic achievement in urban China suggests that compared with authoritarian and neglectful parenting, intensive parenting is associated with children's higher test scores. Besides, the permissive parenting style seems to come in a reasonably close second place behind the intensive parenting style. The inference might be that if you can't afford to be intensive your next best choice would be permissive.

Finally, the fourth goal is to determine whether there were rural-urban differences in terms of parenting styles. Our analysis shows that compared with urban parents, rural parents are more likely to adopt authoritarian than intensive parenting. This finding is consistent with the idea that rural areas have not changed as much as have urban areas in terms of values, attitudes, and practices, and rural parents in China are still more likely to preserve parenting values that are consistent with traditional values and beliefs, such as cherishing strictness and control.

Several limitations to this study need to be acknowledged. First, due to data constraints, we had to use child-reported measures with parent-reported measures to construct parenting typologies. Parents' evaluations of their children are more likely to be subject to parental social desirability bias. We await new and more powerful data for analysis based on child-reported measures only in constructing parenting typologies. Second, even though CEPS is a two-wave longitudinal dataset, key questions used to identify parenting styles, such as the time students spend on extracurricular non-academic activities, do not exist in the baseline survey. Due to data inconsistency, we cannot make full use of the two waves to make causal inferences. Our study is a cross-sectional research design in nature. The future availability of high-quality longitudinal data may provide better insights into the causal relationship between social structure and parenting styles. Third, CEPS data did not collect information on maternal and paternal parenting separately. Knowing the gender of the parents would be important, as fathers and mothers might interact with children in different ways. These and other limitations undoubtedly affected our estimates. Future research with detailed information on paternal and maternal parent-child interaction would further deepen our understanding of the gender differences of parenting styles in contemporary China.

Overall, our study presents a comprehensive analysis of the underlying factors on parenting styles in China. To the best of our knowledge, this is the first study which identifies intensive parenting as a particularly prominent feature of socio-economic-cultural inequality in China. For policy implications, the intensive parenting culture may induce excessive competition among parents, lower the birth rate and exacerbate social divisions. Although China announced in 2016 the end of the one-child policy that had lasted for 35 years, several recent studies have shown that the fertility intentions for a second child are very low (Jiang, Li, & Sánchez-

Barricarte, 2015; Wang *et al.*, 2019). With intensive parenting, parents will have to compete with one another in making ever greater investments in both emotional and financial resources to ensure that their children could have the best attainment possible. Therefore, it is of great importance for the government to take measures that can ease parents' and children's pressures and to avoid over-involvement and excessive competition. Another concern for policymakers is that class-lined differences in parenting styles may contribute to a worsening of social inequality. Policies should help the most disadvantaged groups. We notice that the Chinese government has banned extracurricular tuition classes, which is a welcome development. Yet even more important would be to take measures that can directly target socio-economic inequality at root by reducing income inequality among families. Unequal conditions generate unequal opportunities which produce unequal outcomes. Parenting practices are the reflections of current inequalities and the harbinger of future inequalities.

Chapter 5 The Academic Achievement of Chinese Adolescents: The Role of Shadow Education

In this empirical chapter, I will examine the determinants of shadow education (which would cover private tutoring and hobby classes), and to follow up with a more focused look at the effect of using the two forms - private tutoring and hobby classes - on students' academic achievement.

5.1 Introduction

Chinese adolescents have demonstrated their academic excellence at home and abroad. For example, in PISA²³ 2012, Shanghai adolescents took first place in mathematics with mean scores of 613, highly outperforming OECD countries. Moreover, Shanghai also had the highest proportion of students reaching level 5 or 6 (regarded as top performers) in the mathematics assessment. This percentage is much higher than the other three East Asian countries – Singapore, South Korea, and Japan (Zhu, 2021).

Ample research has attempted to unravel the secret of how and why Chinese adolescents have achieved academic success. Sociologists normally view academic success as class advantages transmitted from one generation to the next and provided various explanations. The first strand, from the perspective of cultural resources, proposes that cultural capital is an important mechanism through which the privileged class secure their class advantage (Bourdieu, 1973, 1986; Bourdieu and Passeron, 1977). Using 2012 PISA, Tan and Liu (2018) found that objectified culture capital plays a bigger role in academic achievement in six Confucian

²³ The Program for International Student Assessment (PISA) is an international assessment that measures 15-year-old students' reading, mathematics, and science literacy every 3 years. First conducted in 2000, the major domain of study rotates between reading, mathematics, and science in each cycle. PISA also includes measures of general or cross-curricular competencies, such as collaborative problem solving.

heritage cultures (CHCs) than nine non-CHCs²⁴, and Confucian values can moderate the effect of culture capital on academic achievement. The second strand, typified by Wisconsin model, provides a social psychological perspective on the mediating effect of expectations and aspirations in the process of status attainment (Sewell and Shah, 1968a; Sewell *et al.*, 1969, 1970). Following this strand, some researchers found that Chinese parents often have high expectations on their children's school performance (Li and Xie, 2020; Liu, Li and Xie, 2020) and that higher educational expectation is related to educational attainment.

In Chinese society, a main characteristic of parenting is that a large portion of children engage in commercial test preparation courses for the purpose of gaining competitive advantages over their peers. Taking place daily after formal school hours, these courses are often called “shadow education”, which mainly target preparing children for standardized exams, and normally depend on the economic resources of adults in the family and increase the cost of raising a child. Besides, with these courses, additional learning time becomes the norm in China, which imposes heavy burdens on children, such as the decline of free play and physical activities and the increase of anxieties among parents and children. Perhaps the main aim of attending such courses is to increase test scores and improve academic performance. In the following section of this chapter, I focus on the role of the Chinese style of shadow education, defined as private tutoring and hobby classes. More specifically, it remains to be examined how large the effects of private tutoring and hobby classes are in China.

Although previous studies offered insights into the role of shadow education, there is conflicting evidence on whether the use of shadow education actually affects academic

²⁴ Six CHCs refer to Singapore, Kong Kong, Taipei, Korea, Macau, and Japan; nine non-CHCs refer to Switzerland, Netherlands, Estonia, Finland, Canada, Poland, Belgium, Germany, and Australia.

achievement. Previous research simply compared the difference in the population average of the grades between students who use shadow education and those who do not, without taking selection bias into full account (e.g., Byun and Park, 2012; Wang and Wu, 2021). In observational studies, overt selection bias occurs when observed individual characteristics influencing academic achievements differ for children who receive the treatment and those who do not - for instance, children who use shadow education are observed to have higher family socioeconomic status than controls; hidden selection occurs when unobserved or unmeasured heterogeneity that affects both using shadow education and educational outcomes. We can only observe each student who receives treatment or not, such as using shadow education, and we cannot observe what would happen if someone who should have received treatment but did not. If selection bias is present, then the estimation of the effect of the use of shadow education would be biased and inconsistent leading to the erroneous conclusion.

This study, focusing on various forms of private tutoring and hobby classes, defined as Chinese style of shadow education, seeks to extend the previous literature by investigating the effects of shadow education on academic achievements among adolescents in China and the determinants of using shadow education. The remaining part of the chapter proceeds as follows: the second part contextualises the research within a distinctive kind of intensive parenting prevalent in China; in the section that follows, we review the literature regarding the purpose and the effect of shadow education; the fourth section is concerned with the methodology employed for this study, and finally, we move on to the findings of the research and include a discussion of the implication of the findings.

5.2 Literature Review

5.2.1 The Use of Shadow Education as a Form of Intensive Parenting

Intensive parenting has received considerable scholarly attention in recent years. Craig, Powell, and Smyth (2014) noted that parenting is very intensive in Australia by highlighting the increasing time parents spent in childcare activities. Shirani, Henwood, and Coltart (2012) highlight that intensive parenting is a highly demanding, child centred approach that increases the pressure of parental responsibility. Hays (1996, pp.128-129) argued that intensive practice of parenting expends a great deal of physical, emotional, cognitive, and financial resources on the child. Lareau (2002, 2003) also documented child-focused, intensive parenting values and practices among middle and upper classes. She coined the term ‘concerted cultivation’ which vividly describes how class shapes daily life, organized leisure activities, language use and intervention in school.

Nelson (2010) based on interviews with 90 parents in the United States found that professional middle-class parents tend to nurture children’s talents through extensive involvement in extracurricular activities. “Professional middle-class parents seek out extracurricular activities for their children to nurture the talents that will help them get into good schools down the road” (Nelson, 2010, p.39). “Parents who enrol their children in the full round of extracurricular activities, assess every academic achievement, and hoard advantages thereby create lives in which every moment is designed to contribute to privilege, to preserving a competitive place, to becoming the best” (Nelson, 2010, p.164). It can be seen that elite parents enrol children in an array of extracurricular activities to seize opportunities for educational success so that their children could stand out in a highly competitive world.

5.2.2 Remedy or Enrichment? The Purpose of Shadow Education

Baker *et al.* (2001) found cross-national variation in the use of shadow education. They classified the purpose of the participation of shadow education activities into two categories: one is an enrichment strategy – that is, high-performing students of mathematics tend to gain access to shadow education in order to create and maintain competitive advantages in educational contests; and the other is a remedial strategy – that is, low-performing students of mathematics tend to employ shadow education that provides more support so that they could cope with the material they should have learned in school. By examining the bivariate patterns of the use of shadow education and math ability, Baker and his colleagues identified three types of countries or regions: “remedial,” “enrichment” and “mixed”. They found that in countries such as South Korea, tutoring for enrichment is very prevalent, where high math scoring children substantially participate in shadow education. Japan is classified as “mixed,” which is of both remedy and enrichment character and the use of shadow education in Japan is often linked with the transition from one school level to the next, and countries such as Denmark can be classified as remedial, where students with lower score tend to use shadow education. Baker’s study is thought-provoking, because it implies that the use of shadow education is not an exogenous variable, but rather the consequence of self-selection. That is, individuals with specific characteristics such as high school performances tend to select themselves into being included into shadow education.

5.2.3 Studies of Shadow Education

Shadow education has been attracting considerable interest since 1990s. Extensive research has shown that high socioeconomic status is associated with the shadow education participation. High SES family can provide more family resources and their children are more likely to use shadow education in Japan (Stevenson and Baker, 1992). Based on the data of Shanghai in

PISA2012, Song and Xue (2017) found that students who were from high SES family spent more time on math tutoring. Matsuoka (2015) found that not only individual SES, but also school socioeconomic composition (school SES) has an impact on the use of shadow education in Japan. Students in high-SES schools tend to participate in shadow education. This indicates that shadow education can reflect social stratification and might serve as a mechanism maintaining social inequality.

However, previous research findings regarding the effect of shadow education on academic achievement have been inconsistent and contradictory. Without correcting for endogeneity, Stevenson and Baker (1992) found a positive effect of the use of shadow education on university attendance in Japan. Likewise, analyses of data from the Educational Longitudinal Study of 2002-2006, Byun and Park (2012) showed a positive relationship between commercial coaching course and SAT scores among East Asian American students. In contrast, Cheo and Quah (2005) reported that private tutoring had a negative impact on grades in Singapore. In addition, several studies make attempts to control for endogeneity, but there is still little agreement on the causal effect of shadow education. For instance, Ha and Park (2017) used propensity score inverse probability weighting approach to adjust for selection bias and found that the Korean secondary school students benefit from shadow education in terms of academic achievement, but the positive effect slightly decrease after selection bias was controlled for. Zhang (2013) used number of private tutoring participants among five closest friends and the distance between home and private tutoring centre as two instrumental variables and showed a non-significant average effect of private tutoring in Jinan, China. Ryu and Kang (2012) combined four methods to deal with endogeneity: instrumental variables, first-difference, propensity-score matching and nonparametric bounding methods, and found a positive association between private tutoring expenditure and academic achievement in Korea.

Most studies of shadow education have focused on the effect of the use of shadow education (Park, Byun, and Kim, 2011; Entrich, 2018; Zhang and Xie, 2016). However, these studies are limited by failing to address the problem of selection bias. The problem of bias arises from correlated observed and unobserved variables. For example, we do not know whether the positive effect of using shadow education on academic achievements is due to the true effect of shadow education or simply due to the fact that high-performing students prefer to spend time on shadow education. As mentioned earlier, there is evidence that students with better prior performance tend to choose shadow education among East Asian American students (Byun and Park, 2012). This individual choice would result in a correlation between the use of shadow education and academic achievements. Also, there are pre-existing differences in the use of shadow education. For instance, one recent study shows that students from higher SES backgrounds are more likely to use shadow education in Japan (Matsuoka, 2015). If this is the case, we do not know whether the effect of shadow education is due to family background or shadow education per se. Hence, in the absence of randomized experiment data, it is highly likely that the estimates of the coefficient of shadow education might be biased and inconsistent. Therefore, this study seeks to use propensity score matching techniques to adjust for overt selection bias in order to estimate the effects of using two forms of shadow education – private tutoring and hobby classes – on students’ academic achievement.

5.3 Methodology

5.3.1 Data

The data for this study are mainly taken from China Education Panel Survey (CEPS). The CEPS is a large-scale, nationally representative, longitudinal survey of junior high school students, as well as their parents and schoolteachers in mainland China. The CEPS data were collected by the National Survey Research Centre (NSRC) at the Renmin University of China using a four-stage stratified sampling procedure. It adopts a multistage design with probability proportional to size. In the 2014-2015 academic year, 9449 students who were in Grade 7 in the baseline survey were successfully followed up, with a follow-up rate of 91.9%. I used the data from the follow-ups of the CEPS fielded in the academic year 2014-2015. The focuses here are 9449 students who were interviewed in the first and second waves of CEPS. To maximise the utility of longitudinal models, we also included baseline controls for prior achievement for the analysis of the effect of shadow education in China. After list-wise deletion of missing data, the final analytic sample in the analysis included 8941 observations.

5.3.2 Measures

This study focused on two particular forms of shadow education activities: attending private tutoring and hobby classes.

Private tutoring classes. In China, every student is required to pass examinations for the three main subjects in order to graduate from secondary school: Chinese, mathematics, and English. Accordingly, we focus on three types of tutoring classes, including Chinese tutoring, mathematics tutoring, and English tutoring. The variable *Chinese tutoring* is a dichotomous variable taking the value of 1 if students attend Chinese or Chinese Composition Writing courses. Similarly, the variable *math tutoring* is dichotomized into 1 for those who attend both Mathematical Olympiad and Ordinary Mathematics courses, and the variable *English tutoring*

includes English courses. Additionally, we further generate a dichotomous variable *private tutoring*, which indicates whether a student was tutored in any of the above three subjects.

Hobby classes. Another key independent variable in the analysis is whether a child participates in off-campus hobby classes, such as sports training sessions for football and basketball and music classes. The CEPS asks students six questions: what kind of extra-curricular courses do you take? Possible answers included: (1) painting or drawing activities; (2) calligraphy; (3) music or musical instrumental activities (singing, piano, Chinese zither, erhu, saxophone, drum sets, etc.); (4) dance; (5) chess clubs or classes; (6) sports activities (table tennis, Chinese kung fu, basketball, football, swimming, gymnastics, skiing, diving, badminton, tennis, etc.). If a student participated in any of the above six types of extra-curricular classes, then the variable *hobby classes* would be coded 1. In this sample, music or musical instrumental activities accounted for the largest proportion of student participation (11.1 percent). The next most popular participation was sports activities (7.9 percent), which were followed by painting or drawing activities (6.5 percent); dance (3.6 percent); calligraphy (3.5 percent); and chess clubs or classes (1.6 percent).

Student academic achievement. The data on academic achievement comes from the test scores in three subjects: Chinese, mathematics, and English. The detailed transcripts describing students' mid-term test scores in the fall semester of the 2014-2015 academic year were provided by schools. Following Zheng *et. al* (2020), we standardize the test scores within each class based on the following formula: $\text{standard score} = \frac{(\text{student original score} - \text{the lowest score in the same class})}{(\text{the highest score in the same class} - \text{the lowest score in the same class})} \times 100$. By using the formula, we obtain the standardized test scores for Chinese, mathematics,

and English, which range from 0 to 100. We also take the simple average of the three scores to generate the overall standardized scores for each student.

Family position. In assessing the links between family position and tutoring or hobby classes attendance, we use several variables to capture family socioeconomic contexts, namely parental education, social class, and family economic condition. Parental education is measured by the highest years of education that were completed by one of the parents. Parental class refer to the five-version category adapted to EGP class schema: professional and managerial salariat (class I and II), routine non-manual (class III), self-employed (class IV), lower-grade technicians, skilled, semi-, and unskilled manual workers in industry and commerce (class V, VI and VIIa), and peasants (class VIIb). As for the family economic condition, respondents were asked to describe the financial condition of their family during which the survey was undertaken (The response categories are “very poor”, “somewhat poor”, “moderate”, “somewhat rich”, and “rich”). We coded family economic conditions into an ordinal variable with three categories (high income, medium income, low income).

Socioeconomic and demographic variables. Control variables include several children’s demographic traits, parental characteristics, and school characteristics. Children’s demographic traits include gender, children’s household registration (*hukou*) type, age, migration, the number of siblings, and ethnicity. Gender is measured by children’s sex (male=1, female=0). *Hukou* is measured by the household registration type (rural=1, urban=0). Migration is measured by children’s migration status (migrant=1, local=0). The Number of siblings is measured by children’s total number of brothers and sisters. Ethnicity is measured by ethnic groups (minority ethnic groups=1, the Han=0).

Parental characteristics include family structure, extended family, parental educational expectations, parental discipline, and parent-child discussion. The variable family structure is

based on children's response to the question of who they live with. Four family structure variables were created, including two-parent family (children live with both their mothers and fathers), single-mother family (children live with mothers only), single-father family (children live with fathers only), and two-parent absent family (children neither live with mothers nor live with fathers). The variable extended family assesses whether the child lives with their grandparents in the same household (yes = 1, no = 0). The variable parents' educational expectation is based on parents' responses to nine categories. The parents were asked to select the category of the highest level of education that they expect their children to receive (The response categories included: "drop out now" = 8, "graduate from junior high school" = 9, "go to technical secondary school or technical school"=11, "go to vocational high school"=11, "go to senior high school"=12, "graduate from junior college"=15, "get a bachelor degree"=16, "get a master degree"=19, "get a doctor degree"=22). The variable parental discipline is based on six statements by children. The students were asked to report their parents' strictness towards them regarding any of the following statements: (1) "child's homework and examination", (2) "child's behaviour at school", (3) "whom the child makes friends with", (4) "child's dress style", (5) "time the child spends on the Internet", (6) "time the child spends on watching TV". (The response categories included: "I don't care" =1; "I do care about it but I am not strict" = 2; "I am very strict about it" = 3). We use factor analysis to generate a common factor reflecting parental supervision of the children (Cronbach's $\alpha = 0.745$). The variable parent-child discussion consists of 8 questions, including "how often do your father discuss the following with you" and "how often do your mother discuss the following with you". The students were asked to select from the following statements: (1) things that happened at school", (2) "the relationship between you and your friends", (3) "the relationship between you and your teachers", and (4) "your worries and troubles". (The response categories included: "never" =

1; “sometimes” = 2; “often” = 3). Similarly, we use factor analysis to generate a common factor reflecting daily discussions between children and parents (Cronbach’s $\alpha = 0.872$).

In terms of school-level variables, we include boarding schools (yes=1, no=0), school type (“public school” = 1, “private school” =2, “private school for children of migrant workers” =3), current ranking of the school in the local county/district (“below average” = 1, “average” = 2, “above average” = 3), and school location (“centre of the city/town” = 1, “outskirts or rural-urban fringe zone of the city/town”=2, “village/small towns/rural areas” = 3).

Prior achievement. To examine the possible reciprocal causal relationship between attendance at tutoring or hobby classes and academic achievement, we also add mid-term test scores in the 2013-2014 academic year (baseline survey). In the same vein, we standardize the test scores for three subjects within each class and obtain the total test score. The students’ total test score in the 2013-2014 academic correlates with their 2014-2015 test score at 0.739. Summary of the descriptive information was shown in Table 5.1.

Table 5.1 Descriptive statistics for outcome and control variables used in this study (N=8941)

	Mean	Tutoring classes attendance		Hobby classes attendance	
		Yes	No	Yes	No
Dependent variables					
2015 Chinese test score	64.627	67.536	63.018	65.703	64.197
2015 Math test score	61.283	68.081	57.522	63.161	60.532
2015 English test score	59.050	67.106	54.592	63.211	57.384
2015 overall test score	61.654	67.574	58.378	64.025	60.704
Children's demographic traits					
Child's gender (=male)	0.515	0.484	0.533	0.439	0.545
Number of siblings	0.700	0.459	0.833	0.546	0.761
Migration status (= migration)	0.192	0.170	0.204	0.191	0.192
Hukou type (=rural)	0.538	0.363	0.634	0.394	0.595
Child's age	13.545	13.402	13.625	13.471	13.575
Child's ethnicity (=minority)	0.087	0.060	0.102	0.074	0.093
Family position					
Parental social class					
Salaried	0.095	0.167	0.056	0.169	0.065
Routine non-manual	0.075	0.111	0.056	0.104	0.064
Self-employed	0.165	0.203	0.144	0.203	0.150
Manual workers	0.458	0.416	0.481	0.389	0.485
Peasants	0.206	0.104	0.263	0.134	0.235
Parental education	10.956	12.241	10.245	12.198	10.459
Family economic condition					
High income	0.064	0.089	0.051	0.102	0.049
Medium income	0.721	0.793	0.680	0.755	0.707
Low income	0.215	0.118	0.269	0.143	0.244
Parental characteristics					
Family structure					
Two-parent family	0.797	0.857	0.764	0.840	0.780
Mother only	0.079	0.073	0.083	0.076	0.008
Father only	0.004	0.028	0.049	0.026	0.048
Two-parent absent	0.083	0.043	0.105	0.059	0.092
Living with grandparents (=yes)	0.319	0.325	0.316	0.306	0.324
Parental educational expectations	16.715	17.478	16.293	17.250	16.501
Parental discipline	0.641	0.673	0.624	0.667	0.631
Parent-child discussion	0.591	0.630	0.570	0.631	0.575
School characteristics					
Boarding schools (=yes)	0.562	0.408	0.648	0.457	0.605
School type					
Public school	0.938	0.965	0.924	0.956	0.931
Private school	0.047	0.027	0.058	0.036	0.051
Private school for children of migrant workers	0.015	0.008	0.019	0.007	0.018
School ranking					
Below average	0.070	0.028	0.093	0.050	0.078
Average	0.664	0.625	0.685	0.606	0.687
Above average	0.266	0.347	0.222	0.344	0.235
School location					
Centre of the city/town	0.493	0.679	0.390	0.628	0.439
Outskirts	0.173	0.133	0.195	0.156	0.180
Rural areas	0.333	0.187	0.414	0.216	0.380
Prior achievement control variables					
2013 Chinese test score	61.740	63.544	60.742	62.852	61.294
2013 Math test score	63.098	67.547	60.636	65.355	62.195

2013 English test score	70.202	75.320	67.370	73.991	68.685
2013 overall test score	65.013	68.804	62.912	67.400	64.058

5.3.3 Methods

Two-level logistic regression Since students are nested within their schools, we conducted two-level logistic models predicting the determinants of tutoring classes and hobby classes. The student and parental characteristics were included as controls at level 1, and school characteristics (boarding school, school type, school ranking, and school location) were added as covariates at level 2. The level-1 link function is written as

$$\text{logit}(\pi_{ij}) = \log\left(\frac{\pi_{ij}}{1 - \pi_{ij}}\right) = \beta_{0j} + \sum_{k=1}^K \beta_k X_{ijk} + \varepsilon_{ij}$$

where β_{0j} is the random intercept term varying for school-level variables. β_{1jk} is the estimated coefficient of covariate X_{ijk} . ε_{ij} is the level-1 residual, varying across all observations. For the second level, we focus on the following equation

$$\beta_{0j} = \gamma_{00} + \sum_{l=1}^L \gamma_{0l} Z_{jl} + \mu_{0j}$$

where γ_{00} is the fixed intercept at the school level. γ_{0l} is the estimated coefficient for covariate Z_{jl} . μ_{0j} is the school-level error term.

Propensity score matching In order to examine the causal effect of tutoring classes and hobby classes participation on academic achievements and adjust for potential selection bias, propensity score matching was utilized to reduce bias due to observed covariates. This matching uses logistic regression based on a set of observed covariates and create a conditional probability of receiving treatment, the propensity score. Two individuals with the same propensity score, matched treated and control pairs, have similar distributions on observed covariates, thus producing unbiased estimates of treatment effect and making the treatment and non-treatment groups more comparable (Rosenbaum and Rubin, 1983).

Propensity score matching is a powerful tool in estimating treatment effect for observational studies. If participation in tutoring classes is considered as a treatment, then propensity score matching allows the question of whether the use of tutoring classes plays a role in improving academic performance to be tested. In answering this question, a key problem is that treatment assignment is very far from being determined at random (Rosenbaum, 2020). In other words, the probability of using shadow education is influenced by family economic resources, parental educational aspiration, children's prior achievements, etc. We can only observe the academic performance of children who attend the tutoring classes. The potential outcome of the counterfactual group, that is, what would have happened under the absence of the tutoring classes for the same children cannot be observed. Propensity score matching attempts to approximate randomization by balancing the distribution of observed covariates (Rubin and Thomas, 2000). It thus is particularly useful in addressing the overt selection bias.

Matching methods on propensity score analysis relies on the assumption of *strongly ignorable treatment assignment* in observational studies (Rosenbaum and Rubin, 1983), which can be expressed as $(Y_0, Y_1) \perp Z \mid X$. This notation illustrates that conditional on the observed covariates X , treatment assignment Z (i.e., binary exposure variable) is independent of the outcome of participants (Y_1) and the outcome of non-participant (Y_0). This assumption holds in randomized experiments and is often violated in quasi-experimental designs and observational studies, but Rosenbaum and Rubin (1983) show that conditional on propensity score, treatment assignment Z is independent of the joint distribution of all observed covariates X . That is, after we run propensity score, *strongly ignorable treatment assignment* assumption holds, then the joint distribution of treated (Y_1) and non-treated cases (Y_0) is independent of group assignment (Z) conditional on propensity score $e(x_i)$, and the expected difference in

observed responses can be used to estimate the average treatment effect. When the treatment assignment is not ignorable, the use of the dummy variables Z leads to endogeneity bias.

5.4 Modelling Results

5.4.1 Descriptive Findings

Figure 5.1 presents the percent of attendance at private tutoring classes and hobby classes in the total sample. It can be seen that about 35.6 percent of grade 8 students enrolled in private tutoring classes, whereas only 28.6 percent participated in hobby classes. More students attended Math tutoring (26.3 percent) than English (23.1 percent) and Chinese tutoring (10.7 percent). Descriptive statistics with the mean by private tutoring and hobby classes status are shown in Table 5.1. In general, students who attended private tutoring and hobby classes have better Chinese, Math, English and total standardised scores. For example, the overall test score for students who attended tutoring classes is 67.6 points, nearly 9.2 points higher than those who did not attend tutoring classes. The same is true for those who used hobby classes. In addition, students who used tutoring and hobby classes generally have a higher social position. In particular, tutoring and hobby classes participation is more prevalent in salaried, routine non-manual, and own accounts. Parents of children who attended tutoring and hobby classes have higher educational attainments. As for parental characteristics, students who attended tutoring and hobby classes generally have higher parental educational expectations, stricter parental discipline and more discussions between parents and children. Finally, private tutoring and hobby classes participation is more prevalent in non-boarding, public schools and in schools that rank above average in the local districts and are located in city centres.

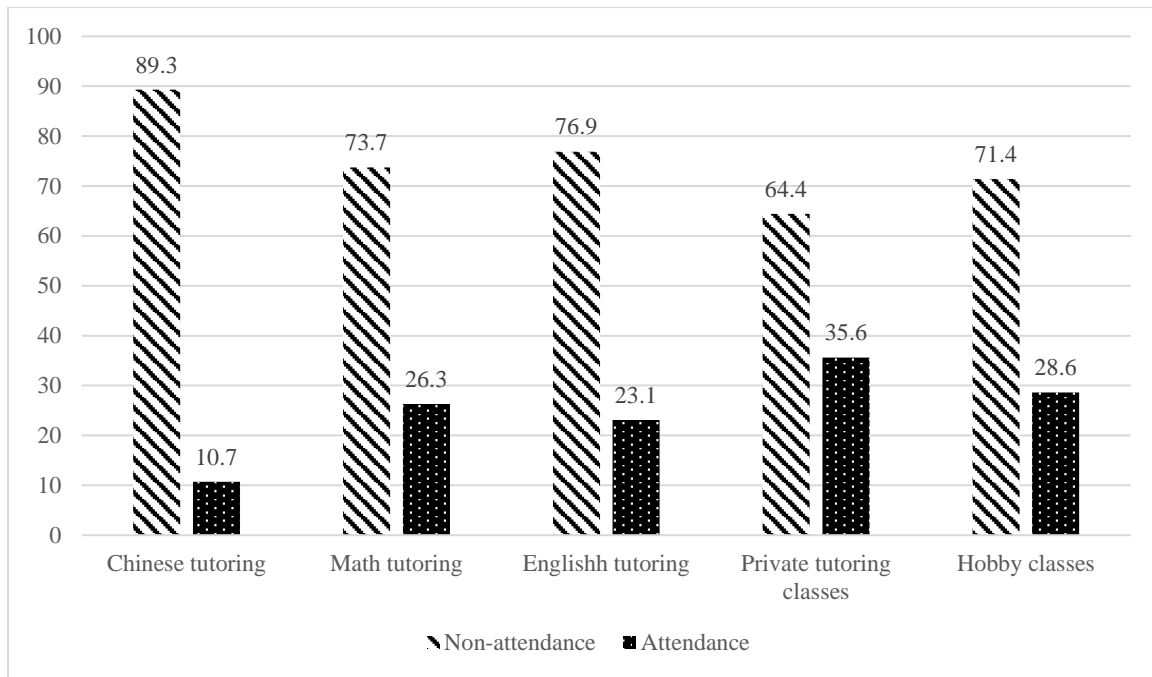


Figure 5.1 Percent of attendance at private tutoring classes and hobby classes in the total sample

5.4.2 The Determinants of Private Tutoring and Hobby Classes Attendance

We replicate the Educational Longitudinal Study of 2002-2006 study (Byun and Park, 2012) to examine the purpose of using shadow education. Byun and Park (2012) innovatively used the relationship between prior achievement and the use of shadow education and found that high-achieving students tend to use shadow education among East Asian Americans. To test whether this relationship exists among Chinese students, we employed the same method using CEPS 2014-2015 dataset by adding a control for students' standard total test scores in the 2013-2014 academic year. Logit coefficients (B), standard errors (SE) and odds ratio are displayed in Table 5.2. It can be seen that there is a positive relationship between prior achievement (1.007, $p < 0.001$) and tutoring class attendance among Chinese students. This suggests that high-achieving Chinese students are more likely to attend private tutoring classes for enrichment purpose rather than for remedy purpose.

Table 5.2 also reports the socioeconomic determinants of private tutoring classes. The probability of a male student enrolling in private tutoring is not significantly different from the female. Holding rural hukou does not mean he/she is less likely to attend private tutoring classes than urbanites. These findings suggest that there are no gender differences and the rural-urban gap in private tutoring attendance. However, children's migration status and sibship size have significantly negative effects on children's likelihood of attending private tutoring classes. Specifically, migrant children and children with more siblings are less likely to attend private tutoring classes.

As for family position, parental class has a significant association with students' private tutoring attendance. Compared with children in salariat families, those in manual worker and peasant families are 0.747 times ($p < 0.001$) and 0.623 times ($p < 0.001$) less likely to attend private tutoring classes. Parents' education has a positive effect on private tutoring attendance. In particular, higher parental education levels can predict a higher tendency to enrol in private tutoring classes. In addition, respondents who describe their family economic condition as low income are less likely to attend private tutoring. Compared with students in two-parent families, those in single-father and two-parent absent families are 0.668 times ($p < 0.5$) and 0.734 times ($p < 0.001$) less likely to attend private tutoring classes. Children who live with grandparents are more likely to attend private tutoring classes. Moreover, parents' educational expectations, parental discipline and parent-child significantly increase the probability of attending private tutoring. Finally, school-level variables also play an important role in private tutoring attendance. Students who are in boarding schools are less likely to attend private tutoring classes. Compared with students in schools that rank below average, those who are in schools ranking in the middle or ranking above average are more likely to attend private tutoring classes.

Students who are in schools that are located in outskirts and rural areas are less likely to attend private tutoring classes.

Table 5.2 Two level logistic regression model predicting private tutoring classes attendance

	B	SE	Exp(B)	Sig
2014 standard overall test score (prior achievement)	0.007	(0.001)	1.007	***
Child's gender (=male)	-0.073	(0.054)	0.930	
Hukou type (=rural)	-0.069	(0.068)	0.933	
Child's age	-0.119	(0.045)	0.888	**
Number of siblings	-0.114	(0.042)	0.893	**
Migration status (= migration)	-0.349	(0.076)	0.706	***
Child's ethnicity (=minority)	-0.051	(0.123)	0.950	
Parental class (ref= salariat)				
Routine non-manual	-0.060	(0.121)	0.942	
Own account	-0.017	(0.107)	0.983	
Manual workers	-0.292	(0.099)	0.747	**
Peasants	-0.474	(0.127)	0.623	***
Parental education	0.032	(0.012)	1.032	**
Family economic condition (ref= high income)				
Medium income	-0.053	(0.102)	0.948	
Low income	-0.272	(0.123)	0.762	*
Family structure (ref = two-parent family)				
Mother only	-0.065	(0.099)	0.937	
Father only	-0.404	(0.143)	0.668	**
Two-parent absent	-0.310	(0.122)	0.734	*
Living with grandparents (=yes)	0.139	(0.059)	1.149	*
Parental educational expectations	0.039	(0.009)	1.040	***
Parental discipline	0.931	(0.140)	2.357	***
Parent-child discussion	0.437	(0.154)	1.549	**
Boarding schools (=yes)	-0.666	(0.181)	0.514	***
School type (ref=public school)				
Private school	-0.043	(0.369)	0.958	
Private school for children of migrant workers	-0.378	(0.597)	0.685	
School ranking (ref=below average)				
Average	0.643	(0.285)	1.902	*
Above average	0.787	(0.332)	2.197	*
School location (ref= centre of the city/town)				
Outskirts	-0.619	(0.220)	0.539	**
Rural areas	-0.591	(0.205)	0.554	**
Constant	-0.919	(0.740)		
<i>N</i>	8941			
Log-likelihood	-4687.990			

Notes: Standard errors in parentheses

+ $p < 0.10$, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Table 5.3 presents the effects of variables considered on children's likelihood of attending hobby classes. After controlling for other variables, prior achievement has a negative effect on the probability of hobby classes. Low-achieving students are more likely to participate in hobby classes. Gender and hukou type are significantly statistical determinants of the probability of hobby classes. In particular, male and rural students are less likely to attend hobby classes.

These findings suggest that there are gender differences and rural-urban gap in hobby classes attendance.

Table 5.3 Two level logistic regression model predicting hobby classes attendance

	B	SE	Exp(B)	Sig
2014 standard overall test score (prior achievement)	-0.003	(0.001)	0.997	+
Child's gender (=male)	-0.460	(0.053)	0.632	***
Hukou type (=rural)	-0.179	(0.066)	0.836	**
Child's age	0.056	(0.042)	1.058	
Number of siblings	-0.041	(0.039)	0.960	
Migration status (= migration)	0.067	(0.073)	1.069	
Child's ethnicity (=minority)	-0.129	(0.113)	0.879	
Parental class (ref= salariat)				
Routine non-manual	-0.149	(0.113)	0.862	
Own account	-0.035	(0.100)	0.965	
Manual workers	-0.410	(0.093)	0.664	***
Peasants	-0.453	(0.120)	0.636	***
Parental education	(0.099)	(0.011)	1.104	***
Family economic condition (ref= high income)				
Medium income	-0.344	(0.096)	0.709	***
Low income	-0.425	(0.117)	0.653	***
Family structure (ref = two-parent family)				
Mother only	-0.070	(0.096)	0.933	
Father only	-0.453	(0.147)	0.636	**
Two-parent absent	-0.083	(0.111)	0.920	
Living with grandparents (=yes)	-0.067	(0.058)	0.936	
Parental educational expectations	0.012	(0.009)	1.012	
Parental discipline	0.391	(0.135)	1.479	**
Parent-child discussion	0.671	(0.151)	1.956	***
Boarding schools (=yes)	-0.101	(0.118)	0.904	
School type (ref=public school)				
Private school	0.081	(0.245)	1.084	
Private school for children of migrant workers	-0.754	(0.415)	0.471	+
School ranking (ref=below average)				
Average	-0.087	(0.183)	0.917	
Above average	0.067	(0.213)	1.070	
School location (ref= centre of the city/town)				
Outskirts	-0.146	(0.143)	0.864	
Rural areas	-0.324	(0.137)	0.723	*
Constant	-2.303	(0.668)	0.010	***
N	8941			
Log-likelihood	-4840.830			

Notes: Standard errors in parentheses

+ $p < 0.10$, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

With regard to family position, it can be seen that children with a higher socioeconomic position are more likely to participate in hobby classes. In particular, children in manual worker and peasant households show lower probability of attending hobby classes than children in salariat households. Parental education has a positive effect on hobby classes attendance. An additional year in parents' education would increase a child's likelihood of enrolling in hobby

classes by 10 percent. Compared with high-income families, children with average and low-income families are less likely to attend hobby classes. These findings suggest a positive association between family socioeconomic background and hobby classes attendance. Children in single-father families are less likely to enroll in hobby classes. Parental educational expectations do not increase the probability of attending hobby classes. However, parental discipline and parent-child discussion can significantly increase the probability of participating in hobby classes. In terms of school-level variables, children whose schools in rural areas are less likely to attend hobby classes than children whose schools in the city centre.

5.4.3 Does Private Tutoring and Hobby Classes Enhance Academic Performance

This section presents estimates of the relationship between private tutoring and hobby classes attendance and student academic achievement using two-level hierarchical linear modelling (HLM) methods. First of all, as shown in Table 5.4, the ICCs (intraclass correlation coefficient) under the null models for the Chinese, math, English and overall test score are 0.086, 0.132, 0.147, and 0.103, respectively. The ICC can be interpreted as the proportion of the variance explained by the grouping structure in the population. Taking the overall test score for example, schools explain 10.3% of the variability of the overall test score among middle school students, suggesting that it is necessary to use multilevel modelling. Next, we mainly focus on the parameter estimates of tutoring classes and hobby classes attendance. It can be seen that private tutoring attendance has a positive relationship on student test scores, whereas hobby classes attendance negatively influences student test scores. In particular, students who enrolled in Chinese tutoring scored 1.689 points higher for Chinese test scores than their non-tutored counterparts, and those who enrolled in Math tutoring have an average increase of 1.699 points for Math test scores, and 2.575 increase for English. Students who attend private tutoring for any subjects have an average increase of 1.751 points for total test scores. As for hobby classes,

students who participated in hobby classes scored 0.848 points lower on total test scores than non-participants.²⁵

²⁵ It is noted that the coefficients on family income are counterintuitive, maybe because there is a potential bias regarding the self-reported family income.

Table 5.4 Associations of private tutoring and hobby classes with student academic achievement

	Model 1 Chinese	Model 2 Mathematics	Model 3 English	Model 4 Overall	Model 5 Overall
Individual-level					
Chinese tutoring	1.689** (0.617)				
Math tutoring		1.699*** (0.516)			
English tutoring			2.575*** (0.507)		
Private tutoring				1.751*** (0.330)	
Hobby classes					-0.848** (0.323)
Male	-6.619*** (0.384)	-2.484*** (0.416)	-6.044*** (0.406)	-3.486*** (0.288)	-3.580*** (0.290)
Rural	0.276 (0.477)	0.878 (0.534)	0.613 (0.506)	0.529 (0.361)	0.479 (0.362)
Age	-1.399*** (0.293)	-2.056*** (0.328)	-1.211*** (0.312)	-1.174*** (0.222)	-1.189*** (0.223)
Sibship size	-0.078 (0.269)	-0.077 (0.301)	-0.163 (0.286)	-0.056 (0.204)	-0.088 (0.204)
Migrant child	0.275 (0.547)	0.556 (0.613)	-0.149 (0.581)	0.130 (0.415)	0.013 (0.415)
Minority	-1.619+ (0.873)	-0.804 (0.979)	-0.811 (0.931)	-1.066 (0.665)	-1.085 (0.666)
Social class (ref=salariat)					
Routine non-manual	-1.146 (0.901)	-1.427 (1.009)	-2.697** (0.955)	-1.510* (0.683)	-1.574* (0.684)
Self-employed	-0.526 (0.796)	-0.379 (0.891)	-1.654* (0.844)	-0.627 (0.603)	-0.666 (0.604)
Manual workers	0.099 (0.734)	-0.315 (0.821)	-1.039 (0.778)	-0.179 (0.556)	-0.370 (0.557)
Peasants	-1.149 (0.892)	-0.832 (0.999)	-1.671+ (0.947)	-1.033 (0.677)	-1.265+ (0.678)
Parental education	0.025 (0.083)	0.073 (0.093)	0.234** (0.088)	0.066 (0.063)	0.093 (0.063)
Family economic condition (ref=high income)					
Low income	1.663+ (0.877)	2.977** (0.982)	1.673+ (0.930)	2.001** (0.664)	1.861** (0.665)
Medium income	1.592* (0.759)	2.866*** (0.850)	2.117** (0.805)	1.894*** (0.575)	1.810** (0.576)
Family structure (ref= two-parent family)					
Mother only	0.439 (0.680)	0.044 (0.762)	-1.023 (0.721)	0.141 (0.516)	0.116 (0.516)
Father only	-1.213 (0.927)	-0.968 (1.038)	-0.415 (0.984)	-0.579 (0.703)	-0.749 (0.704)
Two-parent absent	-2.089** (0.753)	-2.223** (0.844)	-0.720 (0.800)	-1.497** (0.572)	-1.580** (0.572)
Living with grandparents	0.987* (0.419)	0.765 (0.469)	1.169** (0.444)	0.652* (0.317)	0.680* (0.318)
Parents' educational expectation	1.088*** (0.062)	1.209*** (0.070)	1.247*** (0.067)	0.876*** (0.048)	0.888*** (0.048)
Parental discipline	1.611+ (0.962)	0.725 (1.079)	-0.803 (1.022)	0.404 (0.731)	0.716 (0.730)
Parent-child discussion	4.217*** (1.086)	6.127*** (1.216)	4.243*** (1.152)	4.096*** (0.823)	4.332*** (0.825)
School-level					

School type (ref=public school)					
Private school	7.913*	4.325	7.282	7.511*	7.489*
	(3.898)	(4.572)	(4.920)	(3.467)	(3.490)
Private school for children of migrant workers	10.115	-3.517	-24.248**	-8.060	-8.326
	(6.337)	(7.433)	(8.009)	(5.642)	(5.679)
Boarding school	-1.424	1.031	-4.626 ⁺	-2.517	-2.767
	(1.956)	(2.295)	(2.472)	(1.742)	(1.753)
School ranking (ref=below average)					
Average	0.488	0.970	5.098	2.119	2.253
	(2.881)	(3.377)	(3.632)	(2.560)	(2.576)
Above average	0.865	0.846	1.558	0.535	0.755
	(3.429)	(4.022)	(4.327)	(3.050)	(3.070)
School location (ref=city centre)					
Outskirts	-2.629	-0.528	-6.120*	-3.356	-3.602 ⁺
	(2.379)	(2.790)	(3.003)	(2.117)	(2.130)
Rural areas	3.401	0.653	-2.901	0.517	0.274
	(2.200)	(2.581)	(2.777)	(1.958)	(1.970)
Prior achievement control variables					
2013 Chinese test score	0.519***				
	(0.008)				
2013 Math test score		0.659***			
		(0.008)			
2013 English test score			0.613***		
			(0.008)		
2013 total test score				0.748***	0.750***
				(0.007)	(0.007)
Constant	30.204***	18.637**	10.001	10.558*	11.180*
	(5.492)	(6.248)	(6.226)	(4.425)	(4.438)
ICC under null model	0.086	0.132	0.147	0.103	0.103
<i>N</i>	8941	8941	8941	8941	8941
Log-likelihood	-	-39175.177	-	-	-
	38159.961		38701.489	35695.948	35706.546

Notes: Standard errors in parentheses

⁺ $p < 0.10$, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

5.4.4 PSM Results

Table 5.5 presents estimates of the relationship between private tutoring and hobby classes and student academic achievement using PSM estimation methods when all control variables are included. PSM calculates two parameters of interest: the average treatment effect on the treated (ATT) and the average treatment effect on the untreated (ATU). The ATT estimates the difference between average standard test scores for students who attended private tutoring/hobby classes, and the average test scores for the same group under the hypothetical scenario that they had not attended private tutoring/hobby classes. The ATU measures the difference between the average test scores in the hypothetical case that they attended private

tutoring/hobby classes, and the actual case in which they did not attend private tutoring/hobby classes.

We used three matching algorithm – nearest neighbour matching, kernel-based matching, and spline matching, imposing the common support condition. Table A.4 and Table A.5 in Appendix 3 display the balance of the characteristics for the treatment and control groups before and after matching. We hope that after matching, the sample treated and controlled subjects are balanced on all observed covariates. As shown in Table A.4, there are significant differences between our treatment and comparison groups before matching. However, the two groups look extremely similar after matching, with no significant differences in any of the 19 covariates in the PSM for the relationship between private tutoring and student test scores, and very small differences for only three of the variables in the PSM for the relationship between private tutoring and student test scores. Table A.5 also demonstrates that all of the covariates are no longer significant between students who attended hobby classes and those do not attend except for only one variable after matching. In general, we may conclude that the propensity score has successfully removed group differences on the observed covariates.

Table 5.5 displays the PSM estimation results by two types of matching when all control variables are included. It can be seen from the data in Table 5.5 that private tutoring has a positive effect on student test scores, whereas hobby classes attendance has no significant impact on student test scores. PSM estimates for private tutoring tend to be higher than HLM estimates and the PSM estimates for hobby classes are nonsignificant. This suggests that not taking into account the overt selection bias may underestimate the actual returns to tutoring attendance and overestimate the negative effect of hobby classes attendance.

Table 5.5 PSM estimates of private tutoring and hobby classes on student academic achievement (N=8941)

	PSM: ATT	PSM: ATU
PSM estimates of Chinese tutoring on Chinese test score		
Nearest neighbour matching (k=1)	1.089 (1.278)	2.834 (1.212) *
Kernel matching	2.279 (0.577) ***	2.985 (0.839) ***
Spline matching	2.014 (0.609) ***	2.284 (0.944) *
PSM estimates of Math tutoring on Math test score		
Nearest neighbour matching (k=1)	3.360 (1.049) ***	3.628 (1.021) ***
Kernel matching	2.790 (0.553) ***	5.297 (0.740) ***
Spline matching	2.637 (0.578) ***	4.827 (0.801) ***
PSM estimates of English tutoring on English test score		
Nearest neighbour matching (k=1)	3.182 (0.988) ***	4.808 (1.119) ***
Kernel matching	3.060 (0.547) ***	6.958 (0.772) ***
Spline matching	2.802 (0.546) ***	6.200 (0.858) ***
PSM estimates of private tutoring on total test score		
Nearest neighbour matching (k=1)	1.536 (0.736) *	5.162 (0.759) ***
Kernel matching	1.892 (0.421) ***	4.710 (0.543) ***
Spline matching	1.717 (0.418) ***	4.375 (0.521) ***
PSM estimates of hobby classes on total test score		
Nearest neighbour matching (k=1)	-0.034 (0.793)	-1.147 (0.770)
Kernel matching	-0.659 (0.404)	-1.268 (0.503)
Spline matching	-0.711 (0.409)	-1.582 (0.477) ***

Notes: * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$. Standard error in parenthesis.

5.5 Conclusion and Discussion

Shadow education is a widespread phenomenon across East Asian countries such as China. This paper has sought to contribute to the existing research on the socioeconomic determinants and consequences of two forms of shadow education activities (which cover private tutoring and hobby classes). Using data from the China Education Panel Survey, we implement a rigorous analysis of the relationship between private tutoring/hobby classes and student academic achievement. Our main findings can be summarised as follows.

Firstly, our results demonstrate that private tutoring is more popular than hobby classes in China, with 35.6 percent of high school students enrolling in private tutoring in contrast to 28.6 percent in hobby classes. Our findings support that high-performing students are more likely to attend private tutoring, whereas low-performing students are more likely to participate in hobby classes. Meanwhile, we find significant and positive associations of family

socioeconomic background with private tutoring and hobby class attendance. Higher social position, higher parental education and higher family income can significantly predict a higher likelihood of both private tutoring and hobby classes. To the best of our knowledge, this is the first study that has documented the impact of family socioeconomic status on hobby classes attendance.

Furthermore, we implement PSM techniques and find statistically significant relationships between private tutoring and student test scores. Students who attended private tutoring achieve higher scores than students who do not attend for Chinese, Mathematics, and English, which is also in line with Zheng *et al.* (2020). However, we find no significant associations of hobby classes with student test scores, which is at odds with findings by Wang and Wu (2021). Our PSM results suggest that hobby classes attendance will not negatively affect student academic achievements.

The findings of this study have a number of practical implications for social policy. This study provides empirical evidence that socially disadvantaged groups are less likely to attend both private tutoring and hobby classes, and the former can significantly improve test scores. The findings suggest that the existence of private tutoring may exacerbate social and educational inequality in the long run. Social policies should be introduced to allocate resources to socio-economically disadvantaged groups so as to reduce inequality. We notice that off-campus hobby classes have become popular among students as the Chinese government has stepped up efforts to cut their excessive homework and after-school private tutoring, which is a positive change. Yet greater efforts are needed to strengthen supervision on both private tutoring and hobby classes industry and address the deprivation of disadvantaged children in gaining access to hobby classes in order to promote their positive development. Enabling public schools to

organize various kinds of after-class activities such as sports training sessions for football and basketball could be considered as an effective strategy.

A number of limitations need to be noted regarding the present study. First, several empirical strategies in this paper cannot fundamentally address the potential endogeneity problem in the causal relationship between private tutoring/hobby classes attendance and student academic achievement, which limits the possibility of making causal inference from our findings. There might still be some unobserved variables such as students' ambition that are associated with both the likelihood of attending private tutoring/hobby classes and student academic achievement even though we have controlled for a whole set of individual and school level control variables. These problems could be further addressed by relevant studies in the future. Second, due to data limitations, we did not take account of the quality of private tutoring/hobby classes, which might influence our empirical findings. We await new and powerful data containing information on the quality of tutoring, such as the quality of teachers, one-on-one tutoring, small group settings and large group lessons. Third, the positive role of private tutoring and the negligible role of hobby classes in student academic achievement has been established by our study, but we did not examine the effects of private tutoring and hobby classes on psychological well-being and physical health, which could be addressed by future studies.

Chapter 6 How Families and Schools Shape the Cognitive and Non-cognitive Ability of Children

The chapter four has examined the effect of parenting styles on children's academic, psychological, and behavioural outcomes. In this empirical chapter, I will further test the mediating effect of parenting styles and school quality on the relationship between family SES and children's cognitive and non-cognitive skills.

6.1 Introduction

Researchers have long been interested in the origins of inequality in children's cognitive and non-cognitive abilities. One argument is that there are clear and observable social class differences in cognitive ability. Children from more occupationally disadvantaged social classes are more likely to score considerably lower on cognitive ability tests. Those who are poor and who are of ethnic minority heritages experience social and academic disadvantage at kindergarten entry (Lee and Burkam, 2002), and these cognitive inequalities are persistent when children enter school and even influence individuals throughout their lives (Connelly and Gayle, 2019).

The relative importance of family backgrounds (i.e., non-school factors) and school characteristics (i.e., school factors) in producing socioeconomic gaps in cognitive skills has been vigorously debated since the Coleman Report (Coleman *et al.*, 1966). The 1966 Equality of Educational Opportunity, often referred to as Coleman Report, claimed that school characteristics are not the primary factor for educational performance. Family backgrounds (e.g., family and neighbourhood) explain much of the variation in student achievement in comparison to school characteristics (Coleman *et al.*, 1966). The conclusion of the Coleman Report has been supported by a series of seasonal comparison studies that observe changes in

achievement gaps when school is in session (academic year) versus when it is not (summer vacation). By doing so, these studies have found that socioeconomic disparities in cognitive skills grow faster during summer vacation, suggesting that non-school factors are the main driver for inequality in cognitive skills (Downey *et al.*, 2004; Entwisle and Alexander, 1992).

However, contrary to what is typically observed in high-income countries, where school and teacher characteristics seem to exert little influence on academic performance, the effect of school and teacher quality on educational outcomes in Africa, Asia, Latin America, and the Middle East is comparatively greater (Heyneman and Loxley, 1982,1983). Heyneman and Loxley (1983) find that the reason behind this might be the differences in child-rearing patterns in different parts of the world. There might be class differences in child-rearing in high-income countries, which leads to differential attitudes towards schooling, whereas in low-income countries, utilizing education for social mobility might be a consensus among the general public. That is probably the reason why family background affects school performance less in low-income countries (Heyneman and Loxley, 1983).

In this study, we base our analysis on nationally representative data from the China Education Panel Survey of 2014-2015. We focus specifically on both non-school and school mechanisms through which family background might contribute to children's cognitive and non-cognitive ability: (1) parenting styles, and (2) differences in school quality. We know that children from lower socioeconomic backgrounds tend to have less active parent involvement in schooling and tend to attend low-quality schools (less experienced teachers, low-performing peers) (Farkas, 2018). But this points to an important question: what is the relative influence of these two mechanisms? Which mechanisms play a bigger role in the inequality in cognitive and non-cognitive skills? Might differences in school quality generate primarily socioeconomic

disparities in cognitive skills, while differences in childrearing patterns generate primarily socioeconomic disparities in non-cognitive skills? We answer these questions using a multilevel modelling framework that incorporates mediating variables. Our results indicate that family social-economic conditions affect children's cognitive and non-cognitive ability indirectly through parenting styles and school quality. Most of the effects of family SES on cognitive ability operate through school quality, whereas most of the effects of family SES on non-cognitive ability operate through parenting styles.

This chapter is organised as follows. In the next section, we briefly review the socioeconomic inequality in children's cognitive and non-cognitive skills. Then we trace two mechanisms—parenting and school, and their role in the intergenerational transmission of class inequality. After that, we introduce our data and methods and present multilevel models' results. Finally, we summarise and conclude the chapter with further discussions on the implications of our findings.

6.2 Literature Review

6.2.1 Socioeconomic Inequalities in Child's Cognitive and Non-cognitive skills

Ever since Burt (1959, 1961) emphasised the role of intelligence in social mobility, decades of social science research have documented a positive association between parents' socioeconomic status and children's cognitive skills. For example, using 1932 Scottish Mental Health Survey data, Shenkin et al. (2001) have shown that children's cognitive ability at age 11 is strongly related to the parental class. Also, the 1991 sweep of the British National Child Development Study indicates that maternal schooling was a powerful predictor of children's cognitive development (McCulloch and Joshi, 2001). Based on a dataset containing 28000 Swedish schoolchildren, Erikson (2016) has found that cognitive ability accounts for one-third

of the association between family background and educational attainment, and he concluded that the effect of family background on educational attainment is transmitted via cognitive ability. Not only are early life family socioeconomic characteristics closely tied to cognitive, linguistic, or intellectual development (Alwin and Thornton, 1984), but social inequalities in cognitive ability seem to strengthen with age (Jefferis, Power, and Hertzman, 2002). Stumm and Plomin (2015) modelled IQ growth trajectories in British children from age 2 to 16 years and found that the intelligence gap between the highest and lowest SES backgrounds had almost tripled by the age of 16, suggesting cognitive handicap of more disadvantaged families amplified over time.

There is emerging evidence suggesting the role of non-cognitive traits and behaviours in the social stratification process. Bowles and Gintis (2002) placed less importance on cognitive skills and greater emphasis on non-cognitive personality traits and argued that non-cognitive ability was the main driver for labour market success. Even though research has been accumulated on the association between socioeconomic status and cognitive ability, less is known about the extent to which family background is linked to non-cognitive ability, such as motivation, perseverance, efficacy, self-control, and interpersonal skills. One of the few examinations come from Borga et al. (2021), who used cohort data from the Czech Republic and found that low-income children are more likely to lag in non-cognitive skills. Similarly, Fletcher and Wolfe (2016) found a gradient of family income and children's non-cognitive skills in the US, where higher family income can predict higher non-cognitive skills and these differences will increase over time. Deckers *et al.* (2015) recruited 732 children and their mothers in two cities in Germany, who participated in a sequence of experiments and answered brief questionnaires. Based on these experimental data, the authors found that children of higher educated parents are significantly more patient and more altruistic, as well as less likely

to make risk-seeking choices. Although existing literature sheds light on socioeconomic inequality in children's cognitive and non-cognitive ability, they are weak in explaining mechanisms through which family background may affect cognitive and non-cognitive ability. Put differently, what accounts for gaps in cognitive and non-cognitive abilities across rich and poor children? We know little about why children who grow up in more advantaged families score higher on average in cognitive and non-cognitive ability than low-SES children. To open the black box of intergenerational transmission of differential advantages, we propose two possible pathways - parenting and school quality, - and explore their roles in linking socioeconomic status with cognitive and non-cognitive skills in the context of China.

6.2.2 Parenting and its Role in Producing Disparities

What role do parents play in the stratification system? The dominant view is that “Inequality begins at home. It develops from the myriad differences in the ways advantaged, and disadvantaged parents interact with their children” (Kalil, 2015, p.63). Children growing up in more advantaged families have different daily parenting routines compared with their disadvantaged counterparts. For example, the most prominent role of parents in determining children's life circumstances may be the inequality in material and other investments parents make in child-rearing. Bianchi *et al.* (2004) used data from the 1988 and 1998 American consumer expenditure survey. They found that children in households with more educated parents consume more child-related goods and services than other children. In addition to child-oriented expenditures, researchers found an education gradient in parental time spent with children. Using data from the American time use survey, Guryan *et al.* (2008) found that higher educated parents spend more time with their children and are more effective in enriching their children through face-to-face interaction. Kalil *et al.* (2012) found that education influences the amount of time parents spend with their children and how parents spend that time with

children. They identify four categories of active parenting: basic care, play, teaching, and management. The American time use survey showed that highly educated mothers spend more time in basic care when children are infants and more time in the play when children are toddlers (0 to 2). They invest more time in teaching when children are preschool-aged (3 to 5) and more time in management when children are between 6 and 13. The authors posited that highly educated mothers know how to facilitate children's development at different ages than less-educated mothers.

In an influential ethnographic study, Lareau (2003) documented the existence of different parenting values and practices between the classes. Drawing on in-depth observations of black and white middle-class, working-class, and poor families, Lareau observed that middle-class parents engage in "concerted cultivation" parenting, which is marked by parents' attempts to foster their child's talents by incorporating organised activities in their children's lives and consciously developing language use and ability to interact with social institutions. By contrast, working-class and poor parents engage in "accomplishment of natural growth" parenting, where children usually have more unstructured time and are allowed to grow up on their own—as long as basic comfort, food, and shelter are provided. Lareau found that concerted cultivation results in middle-class children with a sense of entitlement, a feeling of the right to pursue their individual preferences, whereas accomplishment of natural growth results in working-class and poor children with a sense of constraint, who did not seem to know how to interact with institutions.

Lareau (2003) highlighted three aspects within which social class differences in parenting practices occur: multiple child leisure activities, language patterns, and interventions in institutions. In concerted cultivation, middle-class children have a hectic schedule of organised

activities orchestrated by adults, and the extensive use of verbal negotiation and reasoning were prevalent, and middle-class parents tried to work closely with their children's teachers, helped with schoolwork and intervened in institutional settings such as classrooms, doctors' offices, or day camps. By contrast, in the accomplishment of natural growth, working-class children experience long stretches of leisure time, child-initiated play, and daily interactions with siblings and neighbours, and working-class and poor parents tend to use directive, shorter sentences, simpler words, and threats of physical punishments, and they lack the requisite vocabulary to interact effectively with educators.

A growing body of research has quantitatively tested Lareau's idea of concerted cultivation and focused on the role of concerted cultivation in children's educational outcomes. Based on elementary school students in America, Bodovski and Farkas (2008) demonstrated that parental SES is positively associated with concerted cultivation, and there was a positive relationship between concerted cultivation and children's academic achievement. Likewise, Roksa and Potter (2011) found that new middle-class mothers engage more in concerted cultivation than stable working-class mothers, and concerted cultivation is positively related to academic achievement among American children between 6 and 14 years of age. In an empirical analysis of US data from the Early Childhood Longitudinal Study, Cheadle (2008) used item response theory (IRT) modelling to operationalise concerted cultivation and suggested that concerted cultivation partially explain socioeconomic gaps in learning. Cheadle (2009) found that family SES influences knowledge achievement indirectly through concerted cultivation.

6.2.3 School Characteristics in Explaining Inequalities

Scholars have long debated the impact of the school on the stratification system. One view is that schools play an important role in reproducing inequality. Bowles and Gintis (1976) argued

that schools reproduced the prevailing relations of production, including reproductive ideologies such as that of mobility, and schools produced workers who know their place in a capitalist economy. From Bourdieu's (1977) perspective, schools reproduce all the more perfectly the structure of the distribution of culture capital among classes in that the culture which it transmits is closer to dominant culture. By converting social hierarchies to academic hierarchies, schools fulfil a function of legitimation that is more and more necessary to the perpetuation of the social order. Contrary to the belief that schools train people for occupational success, Collins (1979) believed that the educational system reproduces middle-class values of competition and achievement and thus serve their needs to maintain a stratified society.

Supplementing these theoretical arguments, empirical evidence goes a step further and has established that schools exacerbate inequality. For example, schools are far from being neutral in its treatment of different students, and one of the main ways schools treat students from different social backgrounds differently is curricular differentiation. Differential educational provision is made by schools for different levels of course, with lower-status courses receiving less resources or low-quality recourses, and it is claimed that working class or black students are more likely to be allocated to low status courses (Foster, Gomm, and Hammersley, 1996). In classrooms, teachers allocate students into small groups according to their academic skills, and it has been found that low SES students are more likely to be placed by teachers into lower-skill learning groups (Condrón, 2007). And disadvantaged students attend school with fewer resources than do white and economically advantaged students, and school resources can promote students' achievements (Condrón and Roscigno, 2003). In addition, increases in high school graduation requirements have inadvertently exacerbated the consequences of differences in schooling quality and the effects of growing income inequality on the life chances of children growing up in low-income families (Duncan and Murnane, 2014). Finally,

because of school segregation, disadvantaged students such as immigrant, poor and black students are more likely to be sorted into the same school, which may, in turn, lead to poor academic results among disadvantaged students (Condrón *et al.*, 2013; Echenique *et al.*, 2006; Park and Kyei, 2010).

Contrary to the view that schools reproduce or even exacerbate inequality, a number of studies argued that schools serve as “the great equalizer”, doing more to reduce than increase existing disparities (Downey, von Hippel, and Broh, 2004; von Hippel, Workman, and Downey, 2018). This line of research emphasizes how socioeconomic gaps in skill change grow faster during summer vacation than during the school year, suggesting the non-school factors were the primary driver for cognitive inequalities. Downey, von Hippel and Broh (2004) analysed 17212 children in 992 schools in 1998-99, focusing on the learning rates of children in kindergarten, summer vacations and first grade. They found that the SES gap in learning grows more slowly during the school year than during the summer months, concluding that although schools do not equalize children from different socioeconomic backgrounds in the absolute sense, it does temper the inequality in terms of the learning rates when school is in session versus when it is not.

Ample research has identified school characteristics, specific school resources, and the socioeconomic and demographic compositions of student bodies that may shape students’ cognitive skills. For example, Coleman, Hoffer and Kilgore (1982) find that Catholic schools, in comparison with public schools, produced higher cognitive achievement. Bryk, Lee and Holland (1993) examine a broad range of Catholic high schools to determine whether or not students are better educated in these schools than those in public schools. They find that Catholic schools do have an independent effect on achievement, especially in reducing

disparities between disadvantaged and privileged students. Moreover, students spend most of their time at school, and schools and teachers play a major role in teaching children how to think, learn, remember, reason and pay attention, which is essential for students if they want to successfully learn their subjects in schools. For example, students lacking logic skills lag behind in their academics in subjects such as Mathematics or comprehension activities. Good quality schools focus on developing the cognitive skills of students so that they do not lag behind in the competition as they grow older. In China, educational resources are not evenly distributed. Secondary schools are divided into “key” and “ordinary” schools. Designated key schools are schools distinguished from ordinary schools by their academic reputation and they generally receive more resources from the state. Influenced by the key school system, Chinese parents tend to mobilise their resources, such as power and wealth, to find the key schools for their children (Liu and Apple, 2016). Thus, school choice is likely to be heavily affected by family background. Recent research has also shown that school socioeconomic segregation exists in contemporary China with student from high SES families gathering in high quality schools (Wu and Huang, 2017).

6.3 Method and Measures

6.3.1 Data

We use data from the China Education Panel Survey (CEPS), collected annually from the 2013-2014 academic year to the 2014-2015 academic year. CEPS employed a stratified, multistage, school-based sampling design to randomly select a nationally representative sample of 19487 students in 438 classrooms of 112 schools in 28 county-level units in mainland China. The baseline survey of CEPS included two cohorts – 10279 first-year junior high school (seventh graders) and third-year junior high school (ninth graders). All seventh graders have been tracked at Wave II. The number of successfully followed students was 9449, with a follow-up

rate of 91.9%. The main reasons for the loss to follow-up were school transfer (71.0%) and dropping out of schools (14.6%).

The CEPS administers five different questionnaires to the sample students, parents, form masters in charge of a class, main subject (Chinese, Mathematics, English) teachers, and school administrators. The student questionnaire asked questions about parent-child interactions, school performance, extra-curricular activities, physical and mental health, and social behaviour development. One adult family member was asked to complete a parent questionnaire that consists of questions about parents' demographic characteristics, parent-child interactions, educational environment and investment for child, community environment, and parent-teacher interactions. Information about school characteristics was provided by school administrators, covering topics on school facilities, the total number of teachers, teaching experience, and governmental subsidies in education.

This study used the latest release 2015 wave data and was based on 9449 eighth graders. Given our interest in school contexts, we created a merged dataset that matches students to their adult parents and schools according to their unique student and school identifiers. There is only a small number of missing cases (325), so I used multiple imputation to impute missing data, and the final sample includes 9449 respondents.

6.3.2 Measures

Outcome variables. Outcomes of interest are cognitive ability and non-cognitive ability. CEPS conducted a standardized, internationally accepted cognitive ability test for sample students,

which consisted of 35 questions and mainly evaluated the problem-solving and logical thinking skills instead of specific knowledge taught in the school curriculum.²⁶

Students' non-cognitive ability was constructed using four indicators that have been highlighted in previous studies in the analysis of children's non-cognitive skills, namely, self-confidence, motivation, prosocial behaviour, and integration.

Self-confidence captures the ability to trust and accept oneself and is comprised of three questions. The first two questions were "are your parents confident about your future" and "are you confident in your future". The response categories included: 1 = "not confident at all", 2 = "not so confident", 3 = "somewhat confident", and 4 = "very confident". The last question was "I usually have confidence in my ability to fulfil my task" with response category 1 as "strongly disagree" and 4 as "strongly agree". Motivation measures the belief in one's ability to accomplish intended outcomes and was based on students' responses to the following statements: (1) "I would try my best to go to school even if I was not feeling very well or I had other reasons to stay at home", (2) "I would try my best to finish even the homework I dislike", (3) "I would try my best to finish my homework, even if it would take me quite a long time", (4) "I would persist in my interests and hobbies". The response categories included: 1 = "strongly disagree", 2 = "somewhat disagree", 3 = "somewhat agree" and 4 = "strongly agree". Prosocial behaviour captures voluntary behaviour intended to benefit another. Prosocial behaviour was based on students' responses to three statements, including (1) "helping elders", (2) "following orders and lining up", and (3) "being nice and honest". Each of these questions has four options with 1 as "never" and 5 as "always". Integration measures the ability to become well integrated into a broader social network and community and was based on

²⁶ Cognitive test score is correlated with standard test score used in chapter 5 at 0.487

students' responses to four statements, including (1) "most of my classmates are nice to me", (2) "my class is in a good atmosphere", (3) "I often take part in school/class activities", and (4) "I feel close to people in this school". The response categories are "strongly disagree", "somewhat disagree", "somewhat agree" and "strongly agree", which were scored 1 to 4, respectively. Following Hsin and Xie (2017), we conducted a principal component analysis to estimate a single latent factor underlying these four indicators of non-cognitive ability.

In order to evaluate the extent to which these four indicators actually measure the latent variables (non-cognitive ability) that they are designed to measure, we performed a two-level confirmatory factor analysis with students nested within schools. The result showed that the measurement model of non-cognitive ability fits the data well. To be specific, the root mean square error of approximation (RMSEA) was 0.056, which was lower than the suggested cutoff point of 0.06 (Hu and Bentler, 1999). And the comparative fit index (CFI) was 0.917, which was greater than the suggested cutoff point of 0.90 (Wang and Wang, 2020). The factor loading linking the indicators to their underlying latent variables are all significant (see Table 6.1), indicating the indicators are well-suited to represent the latent variable.

Table 6.1 Latent construct of non-cognitive ability and its standard loading

Latent construct	Observed variable	Standard loading
Confidence	My parents have confidence in my future	0.694(0.008) ^{***}
	I have confidence in my future	0.753(0.007) ^{***}
	I usually have confidence in my ability to fulfil my task	0.633(0.008) ^{***}
Motivation	I would try my best to go to school even if I was not feeling very well or I had other reasons to stay at home	0.665(0.006) ^{***}
	I would try my best to finish even the homework I dislike	0.896(0.003) ^{***}
	I would try my best to finish my homework, even if it would take me quite a long time	0.906(0.003) ^{***}
	I would persist in my interests and hobbies	0.624(0.006) ^{***}
Prosocial	I help elders	0.559(0.008) ^{***}
	I follow orders and line up	0.743(0.006) ^{***}
	I am nice and honest to other people	0.824(0.007) ^{***}
Integration	Most of my classmates are nice to me	0.756(0.006) ^{***}
	My class is in a good atmosphere	0.706(0.007) ^{***}
	I often take part in school/class activities	0.669(0.007) ^{***}
	I feel close to people in this school	0.780(0.006) ^{***}

Family SES.²⁷ We use a composite index of family SES that includes parental occupational class, parental education, parental communist party membership and self-assessed economic status. Parental class was derived from the information on father's and mother's occupational position whichever is higher. CEPS collected information on both father's and mother's occupation title, which was coded into the International Socio-Economic Index (ISEI) of Occupational Status based on the ISCO 88 categories (Ganzeboom and Treiman, 1996). The coding was presented in Appendix 4. Parental education was measured by the highest years of schooling that were completed by one of the parents. Political party affiliation was based on the affiliation to the Communist party of at least one parent, a dichotomous variable taking the value of 1 if either parent is a Chinese Communist Party (CCP) member and 0 otherwise. Self-assessed economic status was measured by the question "which one of the following best describes the financial conditions of your family at present", and the response was on a five-point scale (1 = very poor, 2 = somewhat poor, 3 = moderate, 4 = somewhat rich, 5 = very rich). To reduce data, we used principal component analysis to extract common factors of these four variables and generate our scores for the socioeconomic status index that ranges from 0 to 100.

Parenting styles. Recall that in chapter 4, we used latent class analysis (LCA) to identify four typologies of parenting styles, which are authoritarian, permissive, intensive, and neglectful.

School quality. To examine the effect of specific school characteristics, we incorporated a set of variables that measure school quality, including student-teacher ratio, teacher's education, school facilities, log government funding. The student-teacher ratio was a simple measurement of the number of students enrolled in a school compared to how many full-time equivalent

²⁷ We use family SES instead of family class position in this chapter mainly because SES is a more composite measure of social advantages and disadvantages that may be more effective for assessing social stratification in education in the Chinese context.

teachers are employed there. The teacher's education was measured by the percentage of teachers who have a bachelor's degree within each school. The school facilities measure was based on school administrators' response to ten items that assess such facilities as "laboratory", "computer room", "library", "music room", "student activity room", "psychological counselling room", "student cafeteria", "playground", "gymnasium", and "swimming pool". Each of these questions has three options: "no, the school does not have this facility", "yes, but need to be improved", "yes, and well equipped", which were scored 1 to 3, respectively. We added up the scores of the ten items and generated the indicator school facilities that range from 12 to 30. Government funding was measured by the question "How much fiscal appropriation per student has your school received this year". To deal with the skewness of this variable, we took the natural logarithm of this variable and generated the score for log government funding.

Controls. We added several control variables that might be correlated with cognitive/non-cognitive ability and family background, including gender (male=1, female=0), *hukou* (rural=1, urban=0), age, ethnicity (minority ethnic groups=1, the Han=0), migration (migrant=1, local=0), the number of siblings, and family structure (two-parent families =1, other forms of families =0). We also include the characteristics of peer groups. CEPS asks students about whether their best friends "do well in academic performance", "study hard", "expect to go to college", "are criticized or punished for violating school rules", "always go to net bars or video arcade" and "drop out of school". Response categories are "none of them", "one or two of them", and "most of them". Obviously, the first three questions measure whether the respondents have good peers, whereas the last three questions measure whether the respondents have bad peers. We use the sum of the first three questions to divide the sum of the last three

questions, with higher values meaning the higher quality of peers. Table 6.2 presents the distribution of the sample for student-level and school-level variables.

Table 6.2 Sample means (SDs) or percentages of variables used in the analysis

Variable	Mean	SD	Min	Max
Cognitive ability	22.96	6.79	0	35
Non-cognitive ability	66.59	15.26	0	100
Student level				
Male	0.52	-	0	1
Age	13.56	0.70	12	18
Minority	0.09	-	0	1
Migrant child	0.20	-	0	1
No. of siblings	0.71	0.81	0	6
Two-parent families	0.79	-	0	1
Characteristics of peer group	2.26	0.67	0.33	3
Family SES quintile				
Lowest	0.22	-	0	1
Second	0.18	-	0	1
Third	0.20	-	0	1
Fourth	0.20	-	0	1
Highest	0.20	-	0	1
Parenting styles				
Authoritarian parenting	0.17	-	0	1
Permissive parenting	0.38	-	0	1
Intensive parenting	0.33	-	0	1
Neglectful parenting	0.12	-	0	1
School level				
Student-teacher ratio	12.45	4.52	2.87	30.71
Teacher's education	0.82	0.22	0	1
School facilities	21.51	4.36	12.00	30.00
Log government funding	6.70	1.19	0	8.38

6.3.3 Analytic Strategy

Our key objective is to test the mediating effect of parenting styles and school quality on the relationship between family SES and children's cognitive and non-cognitive skills.

According to Baron and Kenny (1986), to test mediation, one should estimate the following three regression equations:

$$M_i = \rho_1 + aX_i + e_{i1}$$

$$Y_i = \rho_2 + c'X_i + e_{i2}$$

$$Y_i = \rho_3 + cX_i + bM_i + e_{i3}$$

where Y_i is the dependent variable, X_i is the independent variable, M_i is the mediator.

ρ_1, ρ_2, ρ_3 are intercept, e_{i1}, e_{i2} , and e_{i3} are error term. As Baron and Kenny (1986, p.1177) stated,

“First, regressing the mediator on the independent variable; second, regressing the dependent variable on the independent variable; and third, regressing the dependent variable on both the independent variable and on the mediator.” “To establish mediation, the following conditions must hold: First, the independent variable must affect the mediator in the first equation; second, the independent variable must be shown to affect the dependent variable in the second equation; and third, the mediator must affect the dependent variable in the third equation. If these conditions all hold in the predicted direction, then the effect of independent variable on the dependent variable must be less in the third equation than in the second equation. Perfect mediation holds if the independent variable has no effect when the mediator is controlled” (1986, p.1177).

Following Baron and Kenny’s (1986) mediational model, we develop our analytical strategy in which we start with a linear regression model that estimates the total impact of family SES on cognitive skills (or non-cognitive skills). Our baseline model controls only for family SES and social-demographic variables:

$$Y_i = \beta_0 + \beta_1 * SES_i + X_i + e_i$$

(Model 1)

where Y_i refers to cognitive skills or non-cognitive skills of student i , X_i refers to the social-demographic controls, including male, rural, age, migrant child, the number of siblings, ethnic minority groups, family structure, and characteristics of peer group. The coefficient β_1

may be understood as the overall degree of socioeconomic inequality in cognitive (or non-cognitive) skills.

Next, to test whether parenting styles mediate the effect of family SES on cognitive (or non-cognitive) skills, we added the mediator parenting styles (P_i):

$$Y_i = \beta_0 + \beta_1 * SES_i + X_i + \beta_2 * P_i + e_i$$

(Model 2)

We observed how the coefficient of SES, which is β_1 , changed relative to model 1, and the change can be understood as the indirect effect of SES through parenting styles. According to Baron and Kenny's (1986), if parenting styles mediate the effect of family SES on cognitive or non-cognitive skills, it is required that β_2 is significant and the size of β_1 drop. Therefore, we are particularly interested in the change in the SES coefficient.

In the third step, to test the mediating effect of school quality, we introduced the school fixed effects. We use hierarchical linear modelling (HLM), where students are level-1 measures and schools are level-2 measures. To control for observed and unobserved school-level heterogeneity, we use school fixed effects model. The full model is described as follows:

$$Y_{ij} = \alpha_j + \beta_1 * SES_{ij} + X_{ij} + e_{ij}$$

(Model 3)

where y_{ij} is the student's cognitive or non-cognitive outcome in school j , and α_j is the school fixed effect, which represents the combined effects of omitted school characteristics or unobserved heterogeneity at the school level. e_{ij} is the error term. Again, we are particularly interested in the change in the SES coefficient.

In the fourth step, we still use the school fixed effects model while we control for parenting styles (P_i):

$$Y_{ij} = \alpha_j + \beta_1 * SES_{ij} + X_{ij} + \beta_2 * P_{ij} + e_{ij}$$

(Model 4)

To estimate the effect of specific school-level characteristics, we use school random effects model and assess whether specific school characteristics (e.g. student-teacher ratio, ratio of teaching staff in tertiary education, school facilities, log government funding) are the major pathway for the link between family SES and children's cognitive (or non-cognitive) skills.

The equation for the HLM first level can be specified as:

$$y_{ij} = \beta_{0j} + \beta_1 * SES_{ij} + X_{ij} + \beta_2 * P_{ij} + e_{ij}$$

(Model 5)

For the second level, we focus on the following equation, in which the random intercept term β_{0j} vary for student-teacher ratio, teacher's education, school facilities, log government funding:

$$B_{0j} = \gamma_{00} + \gamma_{01} \textit{Student - teacher ratio}_{0j} + \gamma_{02} \textit{Teacher education}_{0j} \\ + \gamma_{03} \textit{School facilities}_{0j} + \gamma_{04} \textit{Government funding}_{0j} + \sigma_{0j}$$

where σ_{0j} is a school-level residual. The school random effects model allows us to look at the specific school-level characteristics, which can make up for the shortcomings of the school fixed effects. Once again, we are still interested in the change in SES coefficient.

6.4 Results

6.4.1 The Relationship between Family SES and Parenting Styles

In this section, we estimate the relationship between family SES and parenting styles where the mediator parenting style is the dependent variable. Here it can be seen that family SES has a significant impact on parenting styles, with the students in the highest quintile being less likely to have authoritarian, permissive and neglectful (rather than intensive) parenting.

Table 6.3 Multinomial logistic regression estimating the effect of family SES on parenting styles

	Model 1 Authoritarian VS Intensive	Model 2 Permissive VS Intensive	Model 3 Neglectful VS Intensive
Socioeconomic status quintile (ref=lowest)			
Second	-0.106 (0.101)	0.132 (0.088)	-0.041 (0.109)
Third	-0.240* (0.101)	0.056 (0.085)	-0.305** (0.112)
Fourth	-0.573*** (0.106)	-0.131 (0.085)	-0.696*** (0.121)
Highest	-0.850*** (0.124)	-0.181* (0.090)	-1.340*** (0.152)
Male	-0.188** (0.069)	-0.354*** (0.053)	-0.670*** (0.079)
Rural	0.489*** (0.077)	-0.071 (0.058)	0.040 (0.084)
Age	0.046 (0.049)	-0.031 (0.040)	0.204*** (0.053)
Minority	0.710*** (0.115)	0.112 (0.104)	0.611*** (0.126)
No. of siblings	0.351*** (0.044)	0.177*** (0.038)	0.358*** (0.048)
Migrant child	-0.179* (0.088)	0.222*** (0.064)	0.098 (0.094)
Two-parent family	-1.468*** (0.081)	-0.402*** (0.075)	-1.604*** (0.088)
Characteristics of peer group	-0.494*** (0.053)	-0.465*** (0.042)	-1.018*** (0.059)
Constant	0.865 (0.691)	2.108*** (0.567)	0.126 (0.752)
<i>N</i>	9449	9449	9449
Log-likelihood	-11238.834	-11238.834	-11238.834

Note: + $p < 0.10$, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$.

6.4.2 *How Parenting Styles and School Quality Mediate the Effect of Family SES on Cognitive Ability in the Overall Sample*

Table 6.4 estimates the relationship between family SES and cognitive ability in the overall sample. In the first step, we assess the overall degree of socioeconomic inequality in cognitive ability. We regress cognitive ability on the SES quintile, controlling for gender, *hukou* type, age, minority, the number of siblings, migration status, family structure, and characteristics of the peer group. It can be seen that students in the highest SES quintile scored 2.530 points above those at the bottom ($p < .001$); likewise, those in the fourth SES quintile scored 1.402 points above those at the bottom ($p < .001$); those in the middle quintile scored 0.974 points higher ($p < .001$), and those in the second quintile scored 0.789 points higher ($p < .001$). It is shown that gender, age, the number of siblings, family structure, and characteristics of peer groups have an impact on cognitive ability. More specifically, we found that boys enjoy cognitive ability advantages. Overall, boys scored 0.692 points higher than girls on cognitive ability ($p < .001$). Also, age and the number of siblings is negatively associated with cognitive ability, whereas good quality of peer groups are positively associated with cognitive ability.

In the second step, we included parenting styles to examine whether parenting styles mediate the effect of family SES on cognitive ability. It can be seen that parenting styles are significantly associated with cognitive ability, net of family SES. More specifically, children who categorized their parents as authoritarian, permissive, and intensive scored 1.013, 1.534, and 0.786 points higher than those who categorized their parents as neglectful. After controlling for parenting styles, the size of SES second, third, fourth, and highest quintiles dropped but were still significant, indicating parenting styles only partially mediate the association between SES and cognitive abilities.

In model 3, we include the school-fixed effects, which incorporate all observed and unobserved school-level characteristics. Model 3 clearly illustrates that school quality, broadly defined, explains almost the entire association between SES and cognitive ability. After controlling for school effects, the coefficients for the second, third, and fourth SES quintiles become insignificant, and the highest quintile reduced from 2.530 to 0.691 points. This suggests that school quality explains most of the gap in cognitive ability, and school quality largely mediates the effect of SES on cognitive ability. In model 4, we further control for parenting styles, and the results are almost the same, suggesting that parenting styles do not explain much of the variation between family SES and cognitive ability. In addition, permissive parenting is higher than all others in cognitive skills, which suggests that the quality of responsiveness that often presents in permissive parenting can facilitate children's cognitive development. Finally, we turn our attention to the specific school characteristics that may result in socioeconomic inequality in cognitive ability. We utilise the school random-effects model and incorporate a set of school-level variables. It can be seen that school facilities are positively associated with students' cognitive ability. More specifically, schools with better facilities can significantly improve students' cognitive abilities. Also, government funding is positively associated with students' cognitive ability as well. If schools receive more government funding, then they can significantly improve students' cognitive abilities. Other school qualities, such as student-teacher ratio and teacher's education, seem to play a comparatively less important role in predicting cognitive ability. After controlling for a set of school-level variables, the coefficients for the second, third, and fourth SES quintiles were insignificant, and the size of the largest SES quintile dropped compared with model 2 but the coefficient was still significant, indicating that most of the effect of family background on cognitive ability operates mainly through school quality.

Table 6.4 Estimating the relationship between family SES and children's cognitive abilities (N=9449)

	Model 1	Model 2	Model 3	Model 4	Model 5
	Ordinary Least Squares	Ordinary Least Squares	School Fixed Effect	School Fixed Effect	School Random Effect
Socioeconomic status quintile (ref=lowest)					
Second	0.789*** (0.210)	0.755*** (0.209)	0.200 (0.199)	0.194 (0.198)	0.230 (0.198)
Third	0.974*** (0.209)	0.919*** (0.208)	0.220 (0.202)	0.219 (0.202)	0.259 (0.201)
Fourth	1.402*** (0.216)	1.342*** (0.216)	0.217 (0.214)	0.230 (0.214)	0.297 (0.213)
Highest	2.530*** (0.236)	2.450*** (0.237)	0.691** (0.238)	0.700** (0.238)	0.811*** (0.237)
Male	0.692*** (0.138)	0.687*** (0.138)	0.498*** (0.127)	0.520*** (0.127)	0.527*** (0.127)
Rural	0.008 (0.152)	0.017 (0.152)	0.058 (0.156)	0.063 (0.155)	0.048 (0.154)
Age	-1.523*** (0.099)	-1.488*** (0.099)	-1.287*** (0.096)	-1.279*** (0.096)	-1.298*** (0.095)
Minority	-0.049 (0.237)	0.013 (0.237)	-0.632* (0.293)	-0.636* (0.293)	-0.634* (0.287)
No. of siblings	-0.447*** (0.088)	-0.434*** (0.089)	-0.119 (0.088)	-0.123 (0.088)	-0.157+ (0.088)
Migrant child	0.088 (0.168)	0.052 (0.168)	0.296+ (0.179)	0.284 (0.179)	0.275 (0.177)
Two-parent family	0.458** (0.163)	0.314+ (0.168)	0.260+ (0.156)	0.217 (0.159)	0.223 (0.159)
Characteristics of peer group	2.275*** (0.104)	2.240*** (0.106)	1.716*** (0.100)	1.729*** (0.101)	1.761*** (0.101)
Parenting styles (ref= neglectful parenting)					
Authoritarian parenting		1.013*** (0.244)		0.322 (0.227)	0.365 (0.227)
Permissive parenting		1.534*** (0.221)		0.773*** (0.206)	0.827*** (0.206)
Intensive parenting		0.786*** (0.232)		0.129 (0.219)	0.183 (0.219)
School-level variables					
Student-teacher ratio					0.103+ (0.057)
School facilities					0.130* (0.063)
Teacher's education					0.807 (1.236)
Log government funding					0.447* (0.199)
Constant	36.933*** (1.402)	35.677*** (1.411)	35.855*** (1.351)	35.350*** (1.360)	27.616*** (2.358)
Log-likelihood	-30827.958	-30799.573	-29928.535	-29915.308	-30132.431

Notes: Standard errors in parentheses

+ $p < 0.10$, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

6.4.3 How Parenting Styles and School Quality Mediate the Effect of Family SES on Non-cognitive Ability in the Overall Sample

Table 6.5 investigates the relationship between family SES and non-cognitive ability in the overall sample. Model 1 only included family SES and several covariates. It can be seen that students in the highest quintile scored 2.298 points above those at the bottom. Gender, ethnicity, the number of siblings, family structure, and characteristics of peer groups have an impact on students' non-cognitive ability. More specifically, boys scored 0.929 higher than girls in terms of non-cognitive ability, and ethnic minorities scored 2.625 lower than the Han. The number of siblings is negatively associated with non-cognitive ability, and more siblings can predict lower non-cognitive ability scores. Children who are raised in two-parent families scored 2.258 above those in other forms of families. Moreover, characteristics of peer groups are positively associated with non-cognitive ability, and students with a higher quality of peers generally report better non-cognitive ability.

Model 2 added parenting styles. It is shown that parenting styles are significantly associated with non-cognitive ability. More specifically, students who categorized their parents as authoritarian, permissive, and intensive scored 6.172, 5.581, and 12.532 points above those who categorized their parents as neglectful. After controlling for parenting styles, the coefficient for the highest SES quintile was only significant at the 0.5 level and the size dropped, indicating that parenting styles mediate the effect of family SES on non-cognitive ability.

Model 3 used the school fixed-effects model to control for school-level heterogeneity without controlling for parenting styles. Compared with model 2, the highest SES quintile dropped but was still significant at the 0.001 level, indicating that school-level characteristics do not explain much of the variation between family SES and non-cognitive ability. Model 4 still used the school fixed-effects model but we control for parenting styles. It can be seen that after parenting styles were controlled for, the highest quintile was only significant at the 0.05 level, suggesting

that parenting styles explain much of the gap between family SES and non-cognitive ability. Model 5 replace the school fixed effects model with school random effects and incorporated a set of school-level variables. It can be seen that the student-teacher ratio was negatively associated with students' non-cognitive ability, and the lower the number, the better non-cognitive ability will be. Other school qualities, such as school facilities, teacher's education and government funding, seem to have no impact on students' non-cognitive ability. However, compared with model 1, the size of the highest quintile dropped, and the coefficient was significant at 0.05 level, and this was because we controlled for parenting styles that mediate the effect of family SES on non-cognitive ability. Overall, the effect of family background on non-cognitive ability operates mainly through parenting styles rather than school quality.

Table 6.5 Estimating the relationship between family SES and children's non-cognitive abilities (N=9449)

	Model 1	Model 2	Model 3	Model 4	Model 5
	Ordinary Least Squares	Ordinary Least Squares	School Fixed Effect	School Fixed Effect	School Random Effect
Socioeconomic status quintile (ref=lowest)					
Second	-0.457 (0.459)	-0.465 (0.441)	-0.243 (0.456)	-0.312 (0.442)	-0.323 (0.439)
Third	-0.155 (0.458)	-0.480 (0.440)	0.170 (0.463)	-0.138 (0.449)	-0.199 (0.445)
Fourth	0.472 (0.474)	-0.314 (0.456)	0.685 (0.490)	0.022 (0.477)	-0.028 (0.470)
Highest	2.298*** (0.516)	1.135* (0.498)	2.091*** (0.545)	1.231* (0.531)	1.254* (0.522)
Male	0.929** (0.301)	0.165 (0.290)	0.935** (0.290)	0.280 (0.283)	0.269 (0.283)
Rural	-0.115 (0.332)	-0.093 (0.320)	-0.098 (0.356)	-0.167 (0.346)	-0.132 (0.338)
Age	-0.198 (0.217)	-0.034 (0.209)	-0.241 (0.220)	-0.105 (0.214)	-0.086 (0.212)
Minority	-2.625*** (0.526)	-2.064*** (0.506)	-1.327* (0.673)	-1.024 (0.653)	-1.175+ (0.620)
No. of siblings	-1.027*** (0.195)	-0.599** (0.188)	-0.035 (0.204)	0.083 (0.198)	-0.014 (0.196)
Migrant child	0.050 (0.369)	0.190 (0.355)	0.027 (0.411)	0.202 (0.399)	0.159 (0.388)
Two-parent family	2.258*** (0.358)	0.515 (0.355)	1.666*** (0.359)	0.443 (0.356)	0.446 (0.354)
Characteristics of peer group	8.712*** (0.229)	7.551*** (0.223)	7.897*** (0.229)	7.044*** (0.225)	7.141*** (0.224)
Parenting styles (ref= neglectful parenting)					
Authoritarian parenting		6.172*** (0.518)		5.315*** (0.510)	5.483*** (0.509)
Permissive parenting		5.581*** (0.470)		4.604*** (0.464)	4.776*** (0.463)
Intensive parenting		12.532*** (0.492)		10.605*** (0.493)	10.941*** (0.492)
School-level variables					
Student-teacher ratio					-0.175* (0.076)
School facilities					-0.025 (0.082)
Teacher's education					3.066+ (1.654)
Log government funding					-0.053 (0.267)
Constant	50.973*** (3.079)	45.930*** (2.981)	52.941*** (3.107)	48.476*** (3.040)	48.426*** (3.973)
Log-likelihood	-36753.479	-36373.948	-36302.466	-36024.757	-36182.992

Notes: Standard errors in parentheses

+ $p < 0.10$, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

6.5 Conclusions

Research in sociology of education has achieved great gains in socioeconomic inequality in children's cognitive and non-cognitive skills. However, the mechanisms through which family SES operates are unclear. This study explored two possible mechanisms – parenting styles and school quality and we argued that family SES will affect children's cognitive and non-cognitive skills, not only directly but also indirectly through parenting styles and school quality. Two basic conclusions can be derived from the study. First, the effect of family SES on cognitive ability operates through school quality. In other words, most of the effect of family SES on cognitive ability can be explained by differences in school qualities. This is likely because students spend most of their daytime at school, and Chinese parents may influence children indirectly by selecting high quality schools for them, and school quality may transmit class advantage into advantage in cognitive skills. Second, the effect of family SES on non-cognitive ability operates through parenting styles. While schools aim at intellectual development, our study show that the interaction between parents and children can facilitate non-cognitive development, and most of the effect of family SES on non-cognitive ability can be explained by differences in parenting styles.

6.6 Limitations

Although this study contributes to the knowledge of the mechanisms through which family SES operates on children's cognitive and noncognitive ability, it has several limitations that should be acknowledged. First, an important limitation of the analyses presented here lies in the conceptual framework. We focused on two mechanisms through which family SES have an impact on children's cognitive and non-cognitive skills, namely parenting styles and school quality, but these are not only ways family shape children's lives. It is likely that family SES may affect children's cognitive and non-cognitive skills through its association with other

mechanisms such as physical health and well-being, which we did not study in this thesis. For example, Gruijters and Behrman (2020) highlights two pathways through which family SES contribute to learning in sub-Saharan Africa: health and school quality. They argued that due to widespread malnutrition, poverty and stress, children's cognitive functions are at distinct disadvantage, leading to impaired skill development. However, due to data constraints, physical health and well-being is beyond the scope of this study. Further analysis that considers other mechanisms will deepen our understanding of how family SES contributes to cognitive and non-cognitive skills. Second, we can only present the first regression Baron and Kenny's (1986) approach suggests the one where parenting styles (the mediators) are the dependent variables. Due to the fact that school qualities are at the school level, we cannot estimate outcome variables measured at the school level using family SES quintiles (explanatory variables) measured at the individual level. In other words, regressing school qualities (the mediator) on the independent variable is not testable. Third, our final limitation lies in using Baron and Kenny's (1986) approach to study mediation. Even though Baron and Kenny's method has been the most widely used method to test mediation in social and health sciences, a criticism of this method is that the data can behave as if mediation exists when in reality it doesn't and as if it doesn't exist when in reality it does (Antonio and Marta, 2013). There is the possibility that parenting styles and school quality are not actually mediators even if the patterns of estimates suggest so. Future studies using new and appropriate strategies when analysing statistical mediation will deepen our understanding of the mediating effects of parenting styles and school quality on children's cognitive and non-cognitive abilities.

Chapter 7 Conclusion

Parenting styles children receive during childhood and adolescence are of utmost importance to child development. One noticeable recent trend regarding parenting styles in contemporary China is the shift towards intensive parenting. Parallel to the rise of social inequality, some Chinese parents respond by choosing intensive parenting due to a fear of intergenerational downward mobility. Intensive parents supervise and support children and get immersed in how children perform in school via, for example, parents enrolling their children in various kinds of extracurricular courses, helping with and checking homework and even intervening in institutional settings. This echoes the childrearing pattern of what Lareau (2003) has dubbed “concerted cultivation”. This change has far-reaching meanings for Chinese society because parenting plays a major role in the intergenerational transmission of class advantages and disadvantages. The work presented in this thesis has been designed to introduce intensive parenting into the existing typology of parenting style to understand parenting styles and key factors associated with it in contemporary China, and three empirical chapters (chapters 4-6) have been conducted to address three research questions.

7.1 Overview of Key Findings

In this thesis, three main research questions have been investigated: (1) whether parenting styles differ between social groups and how parenting styles are associated with children’s academic, behavioural, and psychological outcomes; (2) how shadow education affects children’s academic achievement; (3) what is the relative importance of parenting styles and school quality in children’s cognitive and non-cognitive skills? Might differences in school quality generate disparities mainly in cognitive skills, while differences in parenting styles

generate disparities mainly in non-cognitive skills? To address these questions, we conducted three empirical studies. The main findings are summarised below.

7.1.1 Research Question 1: Socioeconomic Differences in Parenting Styles

Chapter 4 is centred on socioeconomic differences in parenting styles. Here, we have three main objectives. The first objective was to identify typologies of parenting styles in China — a country which has gone through a rapid transition and has seen an increasing emphasis on intensive parenting over the past decades. The second objective was to explore whether parenting styles differ between social groups from the perspective of social stratification, with particular regard to parents' class position, education, and political affiliation in rural and urban China given the known differences between the two sectors. The third objective was to examine the effect of parenting styles on children's academic, psychological and behavioural outcomes. Using the data from CEPS 2014-2015 academic year, this study complements previous literature by introducing intensive parenting into the existing typology of parenting style and exploring key factors associated with it in China. To address these three research questions, latent class analysis, multinomial logistic regression and the OLS model with a robust standard error accounting for clustering were employed in the empirical analysis.

The empirical results demonstrate that there are class-based differences in parenting styles. First, four typologies of parenting styles have been identified, namely, permissive, intensive, authoritarian, and neglectful parenting. Among them, permissive, authoritarian, and neglectful parenting correspond quite closely to the typology proposed by Baumrind (1966, 1971). Notably, we identify a type of intensive parenting, which accounts for roughly one-third of Chinese population. Intensive parents focus heavily on their children, especially their academic achievement. They facilitate their children's talents by enrolling them on extracurricular

activities, checking and helping with homework, and initiating contact with educators at schools. They are warm and responsive, and they value discipline. Second, parenting styles differ strongly by parental class, education, and parents' CPC membership. We show that manual workers are more likely to adopt neglectful parenting rather than intensive parenting compared to those in professional and managerial salariat occupations in both urban and rural China. Compared with urban parents, rural parents are more likely to adopt authoritarian parenting. Moreover, in urban China, parental education and political affiliation have an impact on parenting styles, with college-educated parents and parents who are affiliated with the Communist party being more likely to adopt intensive parenting in urban China. Thirdly, parenting styles shape children's academic, behavioural and psychological outcomes. Specifically, children of intensive parents have better psychological well-being and engage in fewer delinquent behaviour than children raised by other three types of parents and have better academic achievement than children of neglectful parents.

Our results are somewhat consistent with Lareau's (2003) study, in which middle-class parents engage in a more-intensive *concerted cultivation* style of parenting, whereas working-class and poor parents adopt a less-intensive *accomplishment of natural growth* style of parenting. As the findings demonstrate, manual workers are more likely to adopt neglectful parenting rather than intensive parenting compared to those in professional and managerial salariat occupations. The class differentials in parenting styles may in part reflect the fact that the family life of children from manual workers is at a distinct disadvantage, with important implications of social and cultural reproduction. That socially disadvantaged groups tend not to adopt intensive parenting might be explained by the lack of resources. This might have an impact on children's family life and put barriers to human capital investment. The widespread belief that differentials in parenting styles are due to disparities in available resources (e.g., working-class

children gain little access to organized activities due to high costs of those activities) has prompted policy efforts that pour resources to public schools; however, if differences in the choice of parenting styles is due to personality or socialization, more social work intervention is needed for these parents.

7.1.2 Research Question 2: Shadow Education and Academic Achievement

Lareau (2003) coined the term “concerted cultivation” to describe a specific style of parenting in which middle-class parents invest in children and engage with children’s education via various kinds of organized leisure activities. In Chinese society, one of the main characteristics of Chinese parenting is that a large portion of children enrol on private tutoring and hobby classes. Taking place after formal school, these courses are often called “shadow education”, which imposes heavy burdens on both parents and children. In chapter 5, we examine the determinants of shadow education, with a particular focus on the effect of using the two forms - private tutoring and hobby classes - on student academic achievement.

We find significant and positive associations of family socioeconomic background with private tutoring and hobby class attendance. Higher social position, higher parental education and higher family income can significantly predict a higher likelihood of both private tutoring and hobby classes attendance. To the best of our knowledge, this is the first study that has documented the impact of family socioeconomic status on hobby classes attendance. Furthermore, estimating the effect of the use of shadow education on academic achievement is difficult because of the pre-existing differences in the use of shadow education. We used propensity score matching methods to adjust for selection bias and found that there was positive association between private tutoring and student academic achievement and no association between hobby classes and academic achievement.

7.1.3 Research Question3: the Mediating Effect of Parenting Styles and School Quality.

The third research question focuses on the relative importance of family and non-family factors. We propose two mechanisms through which family socioeconomic background might contribute to children's cognitive and non-cognitive ability: (1) parenting styles, and (2) school quality. The third question simply asked whether and to what extent, parenting styles and school quality can mediate the effect of family socioeconomic background on cognitive and non-cognitive skills.

In order to address this question, we developed an analytical strategy in which we started by estimating the overall degree of socioeconomic inequality in cognitive and non-cognitive skills, and then we controlled for parenting styles to test whether family SES may affect cognitive and non-cognitive skills through its effect on parenting styles and observed the change in SES coefficient, after that we used school fixed effects models to test the extent to which socioeconomic inequality in cognitive and non-cognitive skills is due to differences in school-level characteristics and school fixed effects controlling for observed or unobserved school characteristics, and finally, we used school random effects and looked at specific school qualities including student-teacher ratio, teacher's education, school facilities, log government funding and we observed how SES coefficient changed after the introduction of school fixed effects and school random effects. Empirical findings show that family SES will affect children's cognitive and non-cognitive skills, not only directly but also indirectly through parenting styles and school quality. Most of the effect of family SES on cognitive ability can be explained by differences in school qualities, whereas most of the effect of family SES on non-cognitive ability can be explained by differences in parenting styles.

The study reveals that the effect of family SES on cognitive ability operates through school quality, whereas the effect of family SES on non-cognitive ability operates through parenting styles. It contributes to the existing literature by showing the relative importance of parenting styles and school quality. Future work needs to explore other mechanisms through which family SES might contribute to cognitive and non-cognitive outcomes.

In summary, three empirical chapters are related to each other and fit together in this thesis. The first empirical chapter explores determinants of parenting styles, and how parenting styles relate to children's academic, behavioural, and psychological outcomes. The second empirical chapter is about the manifestation of Chinese parenting, exploring how private tutoring and hobby classes affect children's academic achievements. Third empirical chapter centre on consequences of parenting styles, investigating how parenting styles and school qualities mediate the effect of family SES on children's cognitive and non-cognitive outcomes.

7.2 Strengths and Limitations

Existing studies on parenting styles have been conducted in Western developed countries, and few endeavours have been made to investigate parenting styles in China. Though immensely useful, previous typologies of parenting styles developed by a group of American child developmental psychologists should be cautiously applied in China given the different social context. Over the past decades, China has witnessed drastic economic and social changes, and has seen a sharp reduction of poverty, but also a substantial increase of inequality. Increased inequality would bring about a sense of uncertainty or anxiety among Chinese parents, who are increasingly concerned about their children's status reproduction. On the other hand, Chinese culture places a high premium on academic performance. These cultural beliefs and the far-reaching benefits of elite universities are likely to convince Chinese parents that children's

success would hinge on educational achievements. Using a national representative dataset in China, this thesis has been one of the first attempts to thoroughly examine parenting styles and key factors associated with it in contemporary China. This thesis expands existing literature to look beyond European American societies, identify parenting typologies for Chinese society and investigate how social classes influences parenting styles and the relationship between parenting styles and youth outcomes outside of the United States or West Europe.

Methodologically, this thesis contributes to the existing literature by introducing a third dimension to measure parenting styles. An important criticism of Baumrind and subsequent parenting researchers was their overly rigid two-factor model (Greenspan, 2006). Baumrind's prototype was the combination of two dimensions – demandingness and responsiveness (Baumrind, 1991a, 1991b; Maccoby and Martin, 1983). This thesis introduced a third dimension, which is involvement, to identify a type of intensive parenting characterized by deliberate cultivation and parental involvement to promote children's educational development, which consists of parents participating in the organization of their child's afterschool activities, checking and helping with homework and intervening in institutional settings. Moreover, this thesis applies school fixed effects and school random effects in educational settings, paying full attention to the multistage design of CEPS data. Students are clustered within schools, and this thesis takes into account the clustering and will thus result in correct estimated standard errors and hence correct p-value.

Prior to this thesis, there was uncertainty about whether there are any class-based differences in parenting styles in China, partly because Chinese parents bear the cultural roots that stress the importance on parenting and academic achievement, and Chinese adolescents are often expected to study hard to achieve academic excellence that honours the family. This is the first

study to firmly establish that class position, parental education, and parental party membership affect parenting styles in China. More specifically, our evidence makes several contributions to the current literature by suggesting that manual workers are more likely to adopt neglectful parenting rather than intensive parenting in urban and rural China.

These results challenge previous findings about the negative effect of hobby classes on student academic achievement (Wang and Wu, 2021) and support the previous evidence on the positive effect of private tutoring on student academic achievement (Zheng *et al.*, 2020). Adjusting for selection bias, we find there is no association between attendance at hobby classes and academic achievement, suggesting that hobby classes attendance will not negatively affect student academic achievements. We notice that off-campus hobby classes have become popular among Chinese students as policymakers have stepped up efforts to cut their excessive homework and after-school private tutoring. We suggest that policymakers should steer the shadow education system such as regulating private tutoring and hobby classes.

The empirical findings in this thesis provide a new understanding of intergenerational transmission of class advantage. Several researchers have outlined important mechanisms through which family background might contribute to educational outcomes, such as cultural capital (Bourdieu, 1986), education aspiration (Sewell and Shah, 1968a, 1968b), parental involvement (Domina, 2005), private tutoring (Park, Byun, and Kim, 2011), parental discipline and control (Helwig *et al.*, 2014). This thesis is the first comprehensive investigation of pathways that link family background and children's cognitive and non-cognitive skills. This thesis demonstrates that class differences in parenting styles might serve as one of the main drivers in children's non-cognitive skills. In other words, parenting styles might be important pathways linking family background and non-cognitive skills. Apart from parenting styles, this

thesis also shows that school quality serves as an important pathway that links family background and cognitive skills.

The findings in this thesis are subject to at least four limitations. First, the major limitation of this thesis lies in the nature of cross-sectional data. Even though CEPS is a two-wave panel survey, key questions we are interested in are not repeatedly surveyed in the CEPS data. That is to say, some questions we focused on only exist in the wave two survey (2014-2015 academic year) and do not exist in the baseline survey (2013-2014 academic year). Due to data inconsistency, we cannot make full use of the two waves to do longitudinal data analysis. Further availability of high-quality longitudinal data would make it possible for us to use advanced techniques such as growth curve modelling, growth mixture model (GMM), and survival analysis to analyse change and occurrence over time.

Second, this thesis examines the effect of shadow education on middle school students' academic achievement using propensity score matching methods, which was unable to adjust for hidden selection bias. Hidden selection bias refers to unobserved characteristics or unmeasured confounding variables that affect both the decision to use shadow education and the outcome. Propensity score methods are particularly useful in addressing the overt selection bias, assuming no hidden selection bias. However, if there is hidden bias that is closely related to academic achievement and is not included in the calculation of propensity score, our estimates of the effect of shadow education on academic achievement would be affected. Instrumental variable analysis may remove the effects of hidden selection bias, but due to data restrictions, instrumental variable methods are not employed in this thesis, and such queries may be addressed in the future.

Third, this thesis has not been able to control grandparents' care or grandparenting. Compared with western societies, it is a prevalent phenomenon for grandparents to live together with parents and children and participate in grandchild-rearing activities in the three-generation families in contemporary China. The intergenerational cooperation in child-rearing in urban areas and the grandparents' care for left-behind children in rural areas may have an important impact on parenting styles and child developmental outcomes, and thus may act as an important confounder. Unfortunately, CEPS did not collect information on grandparenting or grandparent involvement. In order to solve this problem, I included family structure as a control variable in all of the empirical analyses, and this may compensate to some extent considering that grandparents may play an important role in families where both parents are absent. However, family structure is not a satisfactory solution because it cannot capture the interaction between grandparents and parents and grandparents and children. Future research that controls for grandparent involvement and grandparenting will provide a deeper insight how parenting styles are related to child development in contemporary China.

Finally, much of the literature has been made of Asian culture in US-based studies looking at Asian Americans. Studies have shown that Asian Americans are highly selected from their country of origin: they are more likely to have graduated from college than those who do not immigrate (Lee and Zhou, 2017; Feliciano, 2005). This hyper-selectivity of Asian immigrants and especially Chinese Americans means that they import middle-class-specific institutions and practices instead of just ethnic-specific practices (Lee and Zhou, 2017). This may have an impact on their parenting styles and practices. Therefore, the findings on Asian Americans may not fit entirely into the literature in this study. We await more research based on Chinese instead of Asian Americans on parenting styles.

7.3 Extension

Firstly, since over one third of Chinese population adopt permissive parenting in the 21st century, more research is needed on the consequences of this kind of parenting style. Contrary to the stereotype that Chinese parenting is “authoritarian” and “controlling”, our data show the majority of Chinese parents adopt permissive parenting because of social change and market-oriented social environment. In Chapter 4, we show that children of permissive parents report poor psychological well-being and engage in more delinquent behaviour than children of intensive parents. However, whether permissive parenting will lead to more fragile and less resilient generation is beyond the scope of this study but deserves further scrutiny. More academic attention is called for on the long-term effect of permissive parenting on children.

Second, more attention should be paid to the mechanism through which parents pass advantage to their children. A growing body of research has documented the importance of family socioeconomic background for a wide range of children’s developmental outcomes, but the avenues through which parents transmit their advantage has been subject to considerable discussion. In Chapter 6, I demonstrated that family background influences children’s non-cognitive skills not only directly but also indirectly through parenting styles. However, this thesis only touched on the mediating effect of parenting styles on cognitive and non-cognitive skills, whether parenting styles children received during childhood and adolescence are key factors in the reproduction of social class inequality and whether parenting styles play a role in social mobility process deserve further scholarly attention.

Finally, high-quality data regarding parenting styles are needed so as to identify causality. So far, the existing literature on parenting styles has primarily been based on cross-sectional data. At present, there is still a lack of data related to parenting styles in China, especially the lack

of high-quality national representative and longitudinal data. It can be said that the data collection related to parenting is still in its infancy, which will limit our understanding towards the causal effect of parenting styles and its mechanism to a great extent and is not conducive to making scientific and effective decisions. Therefore, government and academic research institutions should improve data collection. We should not only actively collect panel data with children, parents and grandparents as the respondents, but also use big data methods and technologies to obtain information related to parenting styles. Organically combining sample survey data with big data and making full use of the different types of data will help to explore the various issues related to parenting styles from both macro and micro perspectives, and to reduce ecological and atomistic fallacies (Robinson, 1951; Li, Pickles, and Savage, 2005).

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Appendices

Appendix 1

Table A.1 Distribution of the age group in the CEPS 2014-2015 data (N=9449)

Age	Percent (%)
12	2.07
13	49.45
14	41.04
15	6.30
16	1.06
17	0.07
18	0.02

Appendix 2

The differences between intensive parenting and authoritative parenting are that intensive parenting is high on demandingness, responsiveness, and involvement, whereas authoritative parenting is only high on demandingness and responsiveness. Intensive parenting possesses the characteristics of authoritative parenting but contains extra meanings, such as deliberate cultivation and over-involvement in children's education. We also performed LCA with a two-dimensional model of demandingness and responsiveness and identified four traditional parenting styles – authoritarian (category 1), permissive (category 2), authoritative (category 3), and neglectful (category 4). The results are displayed as follows. As shown in Appendix Table 1, our preferred model must be either the four-class model or the five-class model. On the one hand, the four-class model has a smaller BIC (90304.38); on the other hand, the LMR LR and ALMR LR tests are in favour of the five-class model ($P=0.6010$ and $P=0.6031$, respectively). Weighing the conceptual clarity versus statistical niceties, we decided to use the four-class model as explained in the text.

Table A.2 Indices of fit for LCA models for two dimensions with one through five classes

Number of classes	Df	G ²	p for LMR	p for ALMR	BIC
1	473	3166.84	-	-	92473.72
2	462	1523.28	0.0000	0.0000	90902.91
3	450	926.19	0.0000	0.0000	90415.66
4	438	705.07	0.0245	0.0252	90304.38
5	426	606.33	0.0004	0.0004	90315.48
6	414	554.71	0.6010	0.6031	90373.71

Table A.3 Estimated relative size and conditional probability of the latent classes for two dimensions

	1	2	3	4
Relative size in total samples	0.177	0.317	0.436	0.071
Relative size in rural subsamples	0.213	0.288	0.421	0.078
Relative size in urban subsamples	0.135	0.347	0.458	0.060
Parents are very strict with children's behaviour	0.387	0.000	0.643	0.046
Parents set strict time limits for Internet access	0.685	0.327	0.756	0.288
Parents force children to obey	0.473	0.253	0.263	0.351
Parents often discuss child's worries or troubles	0.099	0.310	0.523	0.125
Parents and children often have dinner together	0.554	0.850	0.842	0.581
Children are very close to parents	0.252	0.495	0.700	0.176

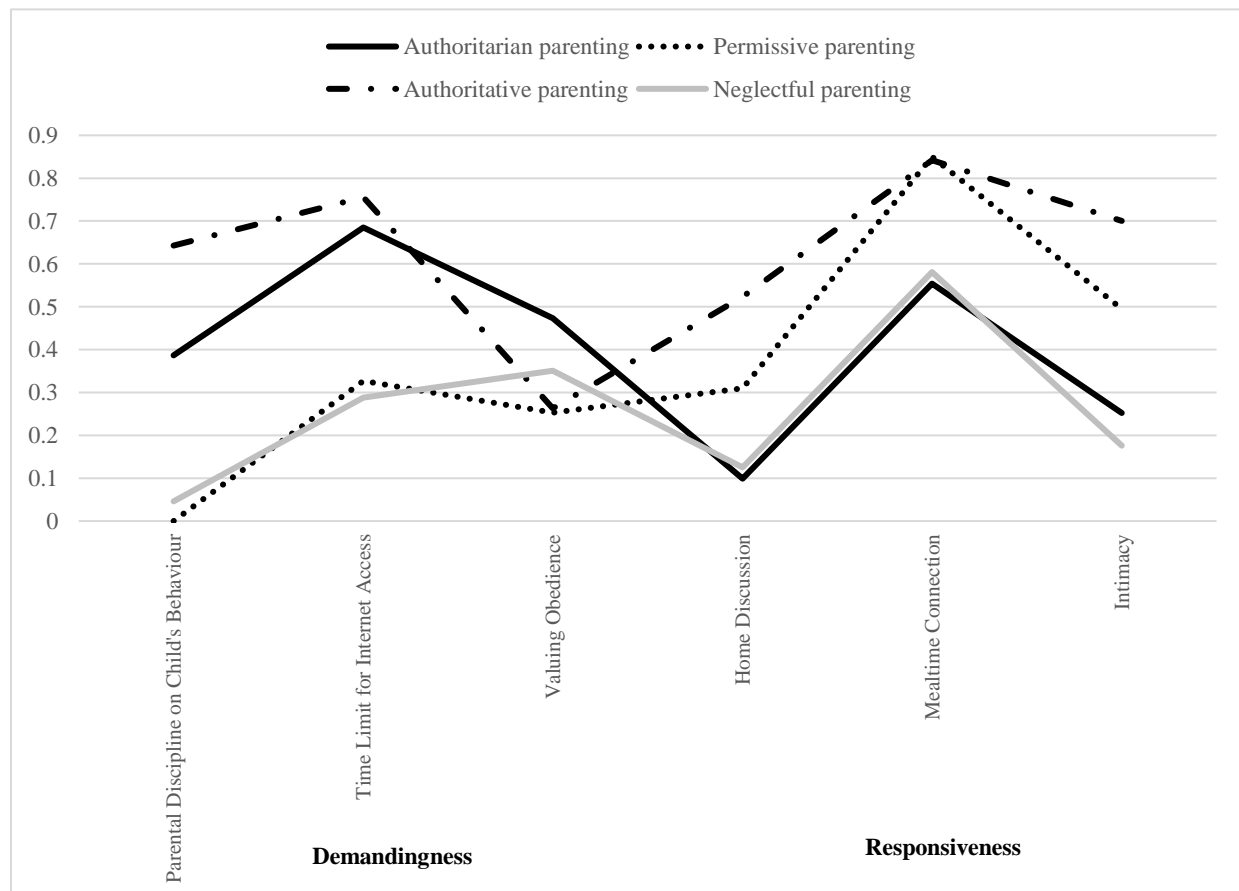


Figure A.1 Conditional item-response probabilities for four parenting styles with two dimensions.

Appendix 3

Table A.4 Covariate balance testing for propensity score matching for the relationship between private tutoring and student academic achievement

Variable	Unmatched Matched	Mean		% bias	% reduct bias	<i>t</i> -test	
		Treated	Control			<i>t</i> -statistics	<i>p</i> > <i>t</i>
Gender	U	0.484	0.533	-9.800		-4.460	0.000
	M	0.484	0.472	2.300	77.000	0.900	0.367
Rural	U	0.363	0.634	-56.300		-25.470	0.000
	M	0.363	0.361	0.500	99.200	0.180	0.855
Age	U	13.402	13.625	-33.500		-14.650	0.000
	M	13.402	13.383	2.900	91.400	1.290	0.198
Number of siblings	U	0.459	0.833	-49.000		-21.520	0.000
	M	0.459	0.462	-0.400	99.200	-0.170	0.869
Migrant children	U	0.170	0.204	-8.500		-3.830	0.000
	M	0.171	0.172	-0.300	96.200	-0.130	0.894
Minority	U	0.060	0.102	-15.400		-6.760	0.000
	M	0.060	0.049	4.300	72.400	2.040	0.041
Parents' social class Salarial	U	0.167	0.056	35.800		17.400	0.000
	M	0.167	0.158	2.600	92.600	0.880	0.377
Routine non-manual	U	0.111	0.056	19.800		9.370	0.000
	M	0.111	0.106	1.500	92.500	0.520	0.601
Self-employed	U	0.203	0.144	15.700		7.230	0.000
	M	0.203	0.203	0.000	100.000	-0.000	1.000
Manual workers	U	0.416	0.481	-13.200		-5.980	0.000
	M	0.416	0.432	-3.200	76.100	-1.270	0.205
Peasants	U	0.104	0.263	-41.900		-18.090	0.000
	M	0.104	0.101	0.900	97.800	0.450	0.649
Parents' education	U	12.241	10.245	66.600		30.630	0.000
	M	12.238	12.213	0.800	98.700	0.310	0.754
Family economic condition Low income	U	0.118	0.269	-38.900		-16.870	0.000
	M	0.118	0.108	2.600	93.300	1.270	0.205
Medium income	U	0.793	0.680	25.900		11.490	0.000
	M	0.794	0.802	-1.900	92.800	-0.810	0.417
High income	U	0.089	0.051	14.800		6.970	0.000
	M	0.088	0.090	-0.700	97.000	0.320	0.749
Family structure Two-parent family	U	0.857	0.764	23.800		10.500	0.000
	M	0.856	0.854	0.700	97.000	0.320	0.749
Mother only	U	0.073	0.083	-3.900		-1.760	0.078

Father only	M	0.073	0.077	-1.500	61.200	-0.620	0.535
	U	0.028	0.049	-10.600		-4.640	0.000
Two-parent absent	M	0.028	0.028	0.200	98.500	0.190	0.852
	U	0.043	0.105	-23.900		-10.240	0.000
Living with grandparents	M	0.043	0.042	0.400	98.500	0.190	0.852
	U	0.325	0.316	1.900		0.860	0.393
Parents' educational expectation	M	0.324	0.341	-3.600	-92.700	-1.440	0.151
	U	17.478	16.293	38.400		16.930	0.000
Parental discipline	M	17.477	17.444	1.100	97.200	0.450	0.653
	U	0.673	0.624	24.900		11.140	0.000
Parent-child discussion	M	0.673	0.669	2.000	92.000	0.810	0.420
	U	0.630	0.570	32.700		14.780	0.000
School type	M	0.629	0.631	-0.600	98.100	-0.250	0.800
	U	0.965	0.093	-27.600		-11.680	0.000
Public school	M	0.965	0.968	-1.400	92.300	-0.690	0.489
	U	0.027	0.058	-15.300		-6.630	0.000
Private school	M	0.027	0.022	2.500	83.700	1.300	0.195
	U	0.008	0.019	-8.800		-3.770	0.000
Private school for children of migrant workers	M	0.008	0.010	-1.600	81.400	-0.780	-0.436
	U	0.408	0.648	-49.500		-22.490	0.000
Boarding school	M	0.408	0.412	-0.800	98.300	-0.330	0.741
	U	0.028	0.093	-27.600		-11.680	0.000
School's ranking	M	0.028	0.028	0.000	100.000	-0.000	1.000
	U	0.625	0.685	-12.500		-5.700	0.000
Below average	M	0.625	0.654	-6.000	52.400	-2.350	0.019
	U	0.347	0.222	27.900		12.900	0.000
Average	M	0.347	0.318	6.300	77.300	2.390	0.017
	U	0.679	0.391	60.400		27.190	0.000
Above average	M	0.679	0.677	0.300	99.500	0.130	0.893
	U	0.133	0.195	-16.700		-7.420	0.000
School's location	M	0.133	0.138	-1.200	92.900	-0.510	0.609
	U	0.187	0.414	-51.000		-22.380	0.000
City centre	M	0.188	0.185	0.600	98.800	0.290	0.772
	U	68.804	62.916	25.800		11.450	0.000
Outskirts	M	68.797	69.670	-3.800	85.200	-1.580	0.115
	U						
Rural areas							
Prior achievement							
Sample	Ps R2	LR chi2	p>chi2	MeanBias	MedBias	B	R
Unmatched	0.149	1738.320	0.000	26.400	24.400	98.400	0.880
Matched	0.003	26.460	0.548	1.900	1.500	12.900	1.170

Notes: B represents absolute standard deviation and R denotes the standard deviation ratio.

Table A.5 Covariate balance testing for propensity score matching for the relationship between hobby classes and student academic achievement

Variable	Unmatched Matched	Mean		% bias	% reduct bias	<i>t</i> -test	
		Treated	Control			<i>t</i> -statistics	<i>p</i> > <i>t</i>
Gender	U	0.439	0.546	-21.300		-9.110	0.000
	M	0.440	0.446	-1.300	93.700	-0.480	0.632
Rural	U	0.394	0.595	-41.000		-17.480	0.000
	M	0.395	0.393	0.200	99.400	0.090	0.932
Age	U	13.471	13.575	-15.300		-6.440	0.000
	M	13.470	13.498	-4.000	73.800	-1.500	0.135
Number of siblings	U	0.546	0.761	-27.100		-11.450	0.000
	M	0.546	0.567	-2.600	90.400	-0.970	0.331
Migrant children	U	0.191	0.192	-0.400		-0.150	0.879
	M	0.191	0.188	0.800	-123.300	0.290	0.775
Minority	U	0.074	0.093	-6.600		-2.760	0.006
	M	0.074	0.082	-2.800	57.100	-1.040	0.298
Parents' social class Salarial	U	0.169	0.066	32.500		15.210	0.000
	M	0.169	0.182	-4.300	86.700	-1.290	0.198
Routine non-manual	U	0.104	0.064	14.500		6.490	0.000
	M	0.104	0.099	2.000	86.300	0.650	0.517
Self-employed	U	0.204	0.150	14.300		6.260	0.000
	M	0.204	0.189	3.900	72.600	1.340	0.181
Manual workers	U	0.389	0.486	-19.500		-8.280	0.000
	M	0.389	0.393	-0.700	96.300	-0.260	0.796
Peasants	U	0.134	0.235	-26.300		-10.760	0.000
	M	0.134	0.137	-0.800	96.900	-0.330	0.744
Parents' education	U	12.198	10.459	56.300		24.770	0.000
	M	12.195	12.211	-0.500	99.100	-0.170	0.861
Family economic condition Low income	U	0.143	0.244	-25.700		-10.530	0.000
	M	0.143	0.153	-2.500	90.300	-0.980	0.325
Medium income	U	0.755	0.707	10.800		4.550	0.000
	M	0.755	0.747	1.900	82.800	0.680	0.497
High income	U	0.102	0.049	20.100		9.260	0.000
	M	0.102	0.100	0.600	97.000	0.190	0.853
Family structure Two-parent family	U	0.840	0.779	15.500		6.440	0.000
	M	0.840	0.840	0.000	100.000	0.000	1.000
Mother only	U	0.076	0.081	-2.000		-0.840	0.402
	M	0.076	0.076	-0.300	85.200	-0.110	0.916

Father only	U	0.026	0.048	-11.600		-4.680	0.000
	M	0.026	0.034	-4.400	62.300	-1.720	0.085
Two-parent absent	U	0.059	0.092	-12.700		-5.190	0.000
	M	0.059	0.050	3.400	73.100	1.420	0.155
Living with grandparents	U	0.306	0.324	-3.800		-1.620	0.105
	M	0.306	0.299	1.700	55.800	0.610	0.543
Parents' educational expectation	U	17.250	16.501	23.700		9.990	0.000
	M	17.249	17.188	1.900	91.800	0.720	0.474
Parental discipline	U	0.667	0.631	17.900		7.590	0.000
	M	0.667	0.670	-1.700	90.700	-0.610	0.541
Parent-child discussion	U	0.631	0.575	30.800		13.150	0.000
	M	0.631	0.635	-2.200	93.000	-0.770	0.439
School type							
Public school	U	0.956	0.931	11.000		4.480	0.000
	M	0.956	0.957	-0.300	96.900	-0.140	0.891
Private school	U	0.036	0.051	-7.200		-2.970	0.003
	M	0.036	0.035	0.800	89.300	0.300	0.763
Private school for children of migrant workers	U	0.007	0.018	-9.400		-3.730	0.000
	M	0.007	0.008	-0.700	92.600	-0.320	0.751
Boarding school	U	0.457	0.605	-29.800		-12.790	0.000
	M	0.458	0.446	2.300	92.300	0.820	0.415
School's ranking							
Below average	U	0.050	0.078	-11.400		-4.680	0.000
	M	0.050	0.055	-1.900	83.200	-0.750	0.452
Average	U	0.606	0.687	-16.900		-7.320	0.000
	M	0.606	0.599	1.500	91.300	0.510	0.607
Above average	U	0.344	0.235	24.100		10.570	0.000
	M	0.344	0.346	-0.500	97.800	-0.180	0.860
School's location							
City centre	U	0.628	0.439	38.600		16.390	0.000
	M	0.628	0.623	1.000	97.300	0.380	0.707
Outskirts	U	0.156	0.180	-6.600		-2.770	0.006
	M	0.156	0.161	-1.400	79.300	-0.500	0.618
Rural areas	U	0.216	0.380	-36.500		-15.090	0.000
	M	0.216	0.216	0.000	100.000	-0.000	1.000
Prior achievement	U	67.400	64.058	14.300		6.100	0.000
	M	67.397	66.019	5.900	58.800	2.170	0.030
Sample	Ps R2	LR chi2	p>chi2	MeanBias	MedBias	B	R
Unmatched	0.085	908.150	0.000	18.800	16.100	72.400	1.220
Matched	0.003	21.790	0.791	1.900	1.700	13.100	0.990

Notes: B represents absolute standard deviation and R denotes the standard deviation ratio.

Appendix 4 Conversion of parents' job title into International Socio-economic Index of Occupational Status (ISEI)

Based on the International Standard Classification of Occupation 1988 (ISCO88) and its corresponding International Socioeconomic Index of Occupational Status (ISEI) (Ganzeboom and Treiman, 1996), we code (1) government official/cadre as 70, (2) cadre/official/administrator of public institutions as 58, enterprises or corporations as 68, (3) scientist, engineer, university of professor or other professionals as 63, (4) doctor, lawyer, high school or primary school teacher as 58, (5) accountant as 51, nurse as 43, computer programmer as 71 or other technical staff as 55, (6) ordinary staff or worker (such as, secretary, bank clerk, or librarian) as 45, (7) ordinary staff or worker in business or service (such as, salesperson as 43, agent as 55, cook as 30, barber as 29 or cosmetologist as 30) as 37, (8) technical worker (such as, driver, electrician, plumber, or mechanist) as 36, (9) ordinal worker (such as, porter, or production line worker) as 27, (10) farmer, herdsman, or fisherman as 23, (11) elementary worker (such as, cleaner, guard, housekeeper, or sanitation worker) as 20, (12) self-employed worker as 51, and (13) unemployed or laid-off worker as 30.