

# Family Background, Parent Involvement, and Shadow Education Participation of Middle School Students: Empirical Analysis from CEPS2015 Data

Xiang Gao, Haiping Xue

Capital Normal University, Beijing 100048, China

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**Abstract.** *Using the 2015 data of the China Education Panel Survey (CEPS), the relationship between family socioeconomic background, parent involvement, and shadow education participation was explored through structural equations. The results showed that: parent involvement strengthened shadow education participation; parent involvement played a part in the mediating role in the influence of family socioeconomic background on shadow education participation. Parent involvement activates the advantage of family socioeconomic background. Families with high socioeconomic backgrounds are more active in participating in shadow education, and families of different strata are divided into opportunities for participation in shadow education.*

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**About the Authors:** *Xiang Gao, Ed.D. Candidate, School of Education, Capital Normal University, Beijing 100048, China. Email: 393156557@qq.com.*

**Correspondence to:** *Haiping Xue, Professor, Director, Institute of Educational Economics and Management, School of Education, Capital Normal University, Beijing 100048, China. Email: xuehaiping\_416@163.com.*

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**I**N the 1960s, Coleman and his colleagues published the “Equal Educational Opportunity Report.” The report found that family background is an essential factor that affects student development and academic performance, and is the regenerating source of educational inequality and even social inequality, and has a more significant impact than school (Coleman, 1966). Family background currently affects student development through two main paths: parental participation in education and providing children with differentiated educational opportunities. Parents’ educational participation indicates that parents influence students’ learning and promote students’ development through direct participation in students’ learning guidance and supervision (Epstein, 1986). In the case of the same school, parents provide differentiated educational opportunities for their children outside the school mainly by participating in “shadow education” (that is, extracurricular tutoring) to improve students’ educational competitiveness (Zhang & Bray, 2018). So what is the relationship between these two paths? What role does parent involvement play in the influence of family socioeconomic background on shadow education participation?

## **Literature Review**

Coleman, Hill, Bronfenbrenner, Joyce Epstein, and others have defined parent involvement (Bronfenbrenner, 1979; Coleman, 1988; Epstein, 1987; Hill & Taylor, 2004). The more recognized definition is: parent involvement is also called parent involvement, that is, “parent involvement in the child’s education.” Its purpose is for the excellent development and growth of children (Conger et al., 2007). In the empirical analysis of the connotation and types of parent involvement in China and abroad, specific operational definitions of parent involvement will be made, such as parental supervision of learning, homework guidance, parental expectations and parent-child communication, and parent-teacher communication (Morgan & Sørensen, 1999).

### ***Study on the Influence of Family Background on Shadow Education Participation***

Studies abroad have found that the family socioeconomic background has an essential influence on shadow education. Darby, Tansel and Bircan, Bray and Kwok used quantitative methods to analyze the effect of family factors on extracurricular tutoring (Bray & Kwok, 2013; Southgate, 2009; Tansel & Bircan Bodur, 2008). Using qualitative interviews and observation and tracking methods, Lareau found that middle-class children are more involved in organized extracurricular activities, including extracurricular tutoring activities (Lareau, 2009).

Domestic scholars Haiping Xue, Binli Chen, Hongli Chu, Manchao Zeng, etc., used quantitative methods to analyze data and found their parents’ educational background, parents’ occupation, and family income have an impact on students’ participation in shadow education (Xue, 2016; Chen & Bai, 2015; Chu, 2009; Zeng et al., 2010). Xuelian Gao used the method of fieldwork to find that urban children mainly participate

in extracurricular tutoring in their spare time, and children from migrant workers' families mainly take "free-range" (Gao, 2017).

## ***Research on the Influence of Family Background on Parent Involvement***

The theory of social capital believes that the higher the family's social and economic background, the higher the emphasis on education and active participation (Masarik & Conger, 2017). Family stress theory (McCubbin et al., 1980) believes that families with low socioeconomic conditions usually do not have high parent involvement behaviors due to enormous economic pressure. The family absence theory believes families with low parent involvement are rooted in the class's massive gap (He, 2008).

Global empirical studies have also found that family socioeconomic background strongly affected parent involvement (Balli, 1996; Bracey, 1996). Domestic scholars Xiaorui Huang (Huang & An, 2008), Chonghan Wu (Wu, et al., 2017), Guiqing An and Yang Yang (An, & Yang, 2018) all believed that families with higher socioeconomic backgrounds have higher parents' enthusiasm for participating in their children's learning.

## ***Research on the Impact of Parent Involvement on Shadow Education Participation***

At present, there are not many studies on the influence of parent involvement on shadow education participation. Xiaoshan Lin's research found that the longer parents spend with their children, the more children's expenditure and opportunities for out-of-school education consumption (Lin, 2018). Haiping Xue studied structural equation modeling and found that parents' educational expectations positively affect extracurricular tutoring (Xue, 2017). Jing Li and Haiping Xue found that in academic tutoring, the longer parents spend with their children, and the more often they supervise homework each week, the more likely they are to participate in extracurricular tuition (Li & Xue, 2016). Jiali Li's research found that parent-child companionship, parent-child activities, etc., can positively predict the participation probability of tutoring, while parent-child communication and family-school communication have little effect (Li & Xue, 2019).

## **Data Source and Variable Description**

The data used in this study all come from the 2014-2015 China Education Panel Survey (CEPS). In 2015, CEPS investigated the relevant situation of eighth-grade students in middle school. The variables used in the study are shown in **Table 1**.

## **Results**

**Table 1. Description of Variables in Statistical Analysis.**

Variable Type	Variable Name	Variable Description	
Shadow Education	Whether eighth grade students participate in shadow education	0=no, 1=yes	
Family Socioeconomic Background	Parent's highest education	1=primary school and below, 2=junior high school, 3=high school, 4=junior college, 5=undergraduate and above	
	Parents' highest occupational stratification	1=lower level, 2=middle level, 3=upper level	
	Family's financial situation	1=very difficult, 2=very difficult, 3=medium, 4=relatively rich, 5=very rich	
	Family Supervise	How often do parents check homework a week	1=no, 2=one to two days, 3=three to four days, 4=almost every day
		How often do parents guide homework a week	1=No, 2=One to two days, 3=Three to four days, 4=Almost every day
Parent Involvement	Family Communicate	Discuss school matters with parents	1=never, 2=occasionally, 3=always
		Discuss with parents about classmates	1=Never, 2=Occasionally, 3=Always
		Discuss teacher matters with parents	1=Never, 2=Occasionally, 3=Always
		Discuss your concerns with your parents	1=Never, 2=Occasionally, 3=Always
	Home school communication	Number of parent-teacher communication this semester	1=never, 2=once, 3=two to four times, 4=five times and more
		Number of times teachers communicated with parents this semester	1=never, 2=once, 3=two to four times, 4=five times and more
	Family expect	Parents' expectations of their children's education	1=graduated from junior high school, 2=high school, 3=associate, 4=undergraduate, 5=graduate and above
		Parents' confidence in their children's future	1=not confident at all, 2=not very confident, 3=relatively confident, 4=very confident
Control Variable	Gender	0=male, 1=female	
	Grades	1=bad, 2=lower middle, 3=medium, 4=upper middle, 5=very good	

## ***The Impact of Family Socioeconomic Background and Parent Involvement on Shadow Education Participation***

In order to verify the research hypothesis, take shadow education participation as the dependent variable, select three variables of family socioeconomic background and ten variables of parent involvement as independent variables, and use gender and performance as control variables to establish a binary logistic regression model as follows:

$$Y = F(I, S, F)$$

**Table 2. The Influence of Family Socioeconomic Background and Parental Participation on Shadow Education Participation.**

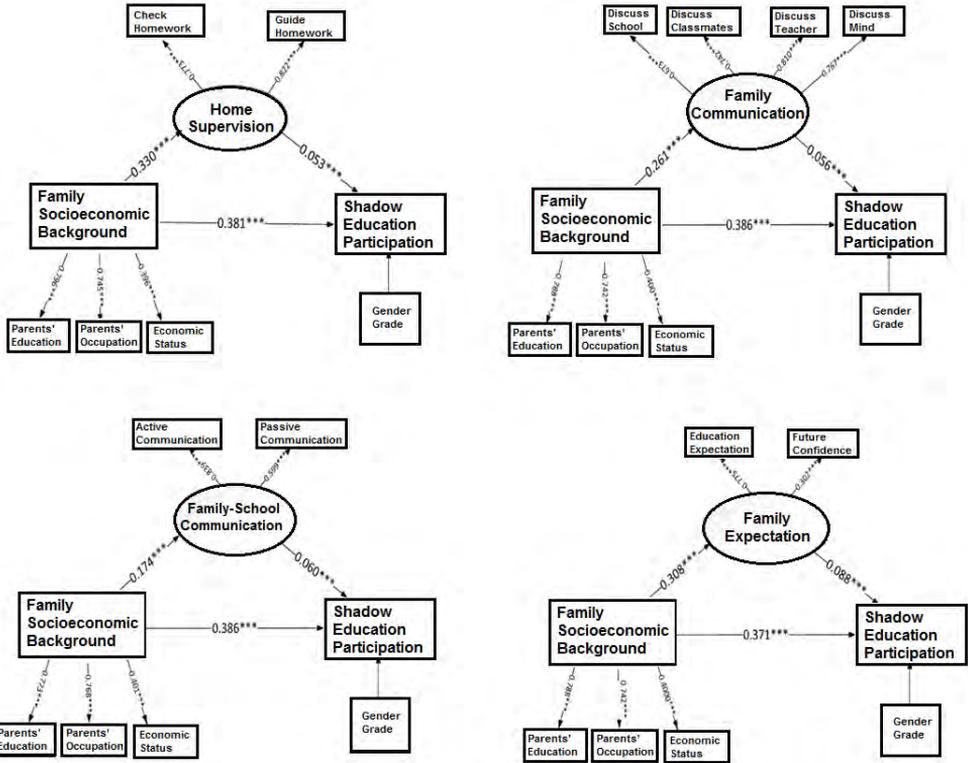
Variable	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7
Gender: Female	0.25***	0.29***	0.22***	0.25***	0.29***	0.29***	0.29***
Grades	0.06**	0.07***	0.03	-0.04	0.05**	-0.03	
Family Socioeconomic Background							
Parents' Education	0.45***	0.44***	0.42***	0.42***	0.40***	0.44***	0.38***
Parent Occupation	0.35***	0.36***	0.35***	0.35***	0.34***	0.35***	0.33***
Economic Status	0.29***	0.28***	0.26***	0.26***	0.26***	0.27***	0.24***
Home Supervision							
Check Homework			0.20***				0.17***
Guide Homework			-0.04				-0.07**
Family Communication							
Discuss School				0.13**			0.09*
Discuss With Classmates				0.09*			0.06
Discussion Teacher				0.09*			0.03
Discuss Your Mind				0.02			-0.03
Family Expectations							
Parent Expectations					0.13***		0.12***
Future Confidence					0.23***		0.15***
Family-School Communication							
Active Communication						0.16***	0.12***
Passive Communication						0.00	0.00
Constant Term	-3.86***	-4.11***	-4.38***	-4.65***	-5.16***	-4.44***	-5.70***
Sample	9191	9191	9191	9191	9191	9191	9191
Cox & Snell R <sup>2</sup>	0.12	0.123	0.13	0.13	0.13	0.13	0.14
Nagelkerke R <sup>2</sup>	0.17	0.170	0.18	0.18	0.18	0.18	0.20

Note: \*p means  $p < 0.1$ , \*\*p means  $p < 0.05$ , \*\*\*p means  $p < 0.01$ .

In the model, Y represents whether the student participates in shadow education, I is an individual variable of the student, S is the family socioeconomic background, and F is parent involvement.

In **Table 2**, there was a significant positive correlation between parents' educational background, parents' occupational grade, financial status, and student participation rate in shadow education (model 1). The shadow education participation rate of girls was significantly higher than that of boys, and the higher the score, the higher the participation rate of shadow education (model 2).

In Model 3, students whose homework was checked frequently were more likely to participate in extracurricular tutoring. In Model 4, "discussion school," "discussion classmate," and "discussion teacher" all had a significant favorable influence on students' participation in shadow education. In Model 5, "parent education expectations" and "confidence" had a positive and significant impact on shadow education participa-



**Figure 1. The Mediating Effect Model of Parental Participation in Four Dimensions.**

tion. This also verified previous literature results: the higher the parents' expectations, the more confident they were in their children, and the more likely students were to participate in extracurricular tutoring. In Model 6, "actively communicating with teachers" positively and significantly impacted students' participation in extracurricular tutoring. Model 7 was a full-variable model; in addition to the index of homework guidance, most indicators of family socioeconomic background and parent involvement had a significant positive impact on shadow education. Parent involvement had not completely replaced shadow education but had become the driving force for students to participate in extracurricular tutoring.

### ***Analysis of the Mediating Effect of Parent Involvement in the Influence of Family Socioeconomic Background in Shadow Education Participation***

**Table 3. Intermediary Model Fitting Results of Various Dimensions of Parent Participation in Affecting Shadow Education Participation.**

Fitting Index	CMIN	DF	CMIN/DF	RMSEA	NFI	RFI	IFI	TLI	CFI
Home Supervision	564.375	18	31.354	0.057	0.955	0.930	0.956	0.932	0.956
Family Communication	870.167	33	26.369	0.053	0.960	0.945	0.961	0.947	0.961
Family-School Communication	739.436	18	41.080	0.066	0.927	0.887	0.929	0.889	0.929
Family Expectations	585.170	17	34.422	0.060	0.940	0.901	0.942	0.904	0.942
Judgment Criteria			< 5.0	< 0.10	> 0.9	> 0.8	> 0.9	> 0.8	> 0.9

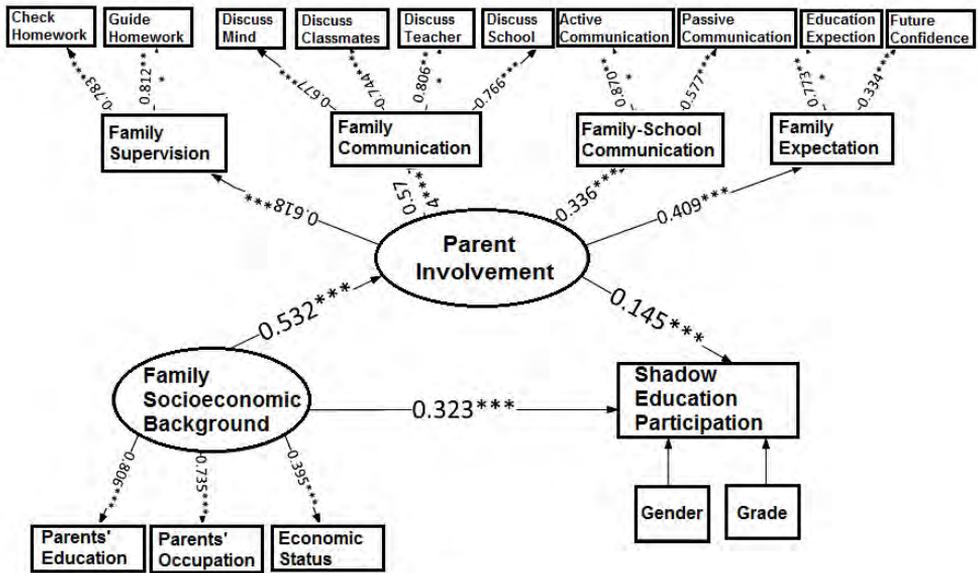
Based on the above research review and binary logistic regression analysis, and then referring to the structural equation related method (Hou et al., 2004), a mediating effect model between the three is constructed.

### *The Mediation Effect of the Four Dimensions of Parent Involvement*

**Figure 1** presents the analysis of the effect of family supervision, family communication, family-school communication, and family expectations as intermediaries. The direct effects of family supervision, family communication, family-school communication, and family expectations on students' participation in shadow education are 0.053, 0.056, 0.060, 0.088, respectively, and the t-test results are all significant. It can be seen that family expectations have the most significant impact on students' participation in extracurricular tutoring, followed by family-school communication, family communication, and family supervision.

The formula for the total influence of family socioeconomic background on extracurricular tutoring participation is  $c=c'+a*b$ , where  $c'$  is the direct influence of family socioeconomic background on extracurricular tutoring. The real influence is the sum of direct and indirect influences. The total effect of family socioeconomic background on tutoring through the four parent involvement dimensions is family supervision 0.398, family communication 0.401, family-school communication 0.396, and family expectations 0.398.

The fitting results of the four-dimensional mediation model are shown in **Table 3**. Except for  $CMIN/DF > 5$ , all other fitting indexes of each parent involvement dimension reached an excellent level. The size of  $X^2$  (i.e.,  $CMIN/DF$ ) is related to the sample size  $N$ . When the sample size increases,  $X^2$  increases, so it is not limited to  $X^2$  as a discriminant index, but also other fitting indices (Hou et al., 2004). The sample size of this



**Figure 2. The Mediating Role of Parent Involvement between Family Socioeconomic Background and Student Shadow Education Participation.**

study is 9,191. It can be referred to other fitting indicators, and other observation data would fit better.

### *Analysis of the high-level mediation effect of parent involvement*

This study constructed a high-level mediation model in which family socioeconomic background influences student participation in shadow education. The mediation path model fits the data well: effective sample size  $N = 9,191$ ,  $CMIN/DF = 29.416 > 5$ . Due to the large sample size, it cannot be judged by  $CMIN/DF$  alone. It should also be combined with other fitting indexes and the rationality of the relationship between the variables, and whether the parameters' estimation is appropriate (Hou et al., 2004). Approximate root mean square error  $RMSEA = 0.056$ , normalized goodness of fit index  $NFI = 0.920$ , comparative goodness of fit index  $CFI = 0.922$ , non-standardized goodness of fit index  $TLI = 0.904$ , and other fit indexes meet the criteria for judgment. These data indicate that the entire model fits well with the actual observation data.

The model standardized regression path coefficient results are shown in **Figure 2**. The family socioeconomic background has a direct effect of 0.323 on student participation in shadow education, an indirect effect of 0.077 ( $0.532 \times 0.145$ ), and a total effect

of 0.400. Accordingly, the family socioeconomic background directly affects whether students participate in extracurricular tutoring and indirectly affect parent involvement.

The direct effect of parent involvement on extracurricular tutoring is 0.145. From the model results, parent involvement plays a part in an intermediary role in family socioeconomic background and shadow education participation.

## ***Conclusions and Discussion***

This study examined the relationship between family socioeconomic background and parent involvement in shadow education participation and reached the following conclusions:

(i) Parent involvement is a powerful driving force for students to participate in shadow education, and the active participation of parents strengthens the participation in shadow education. Parent involvement has a significant positive impact on middle school student shadow education participation; that is, the higher the degree of parent involvement, the greater the chance of students getting shadow education. Specifically, family expectations have the most significant impact on shadow education participation, followed by family-school communication, family communication, and family supervision. Family expectations promote students to participate in tutoring most likely, mainly because parents hope to achieve social class upward mobility through education, and shadow education is one of the ways to improve educational competitiveness.

(ii) Parent involvement plays a part in an intermediary role in the influence of family socioeconomic background on shadow education participation. That is, family socioeconomic background affects the probability of students participating in shadow education through parent involvement. Specifically, family expectations have the most excellent intermediary effect in the family socioeconomic background, affecting students' participation in shadow education, followed by family supervision, family communication, and family-school communication.

Studies have proposed that parent involvement can activate the advantages of family background and empower children's school education (Lareau, 1987). Therefore, parent involvement provides advantages for children's school education and affects the chance of receiving shadow education. Families of different classes have differentiated participation opportunities in shadow education: parent involvement activates the advantages of the family's socioeconomic background, and families with high socioeconomic backgrounds often participate more actively in shadow education.

The research conclusions include the family socioeconomic background, parent involvement, and shadow education in the Chinese context, confirming Lareau's research in the United States. Lareau described in "Unequal Childhood" that middle-class American parents are more actively involved in students' study and life and achieve "cooperative training" by arranging organized extracurricular activities for students; however, the working class is more inclined to "stocking." That is, let children "achieve natural growth" (Lareau, 2009). Different social classes make the degree of parent involvement different. Parents focus on activating resources based on class ad-

vantages, allowing their children to conform to educational organizations' evaluation standards, and helping their children achieve success in school education (Lareau, 2009). This study explored the impact of parent involvement on shadow education participation, and to a certain extent, improved Lareau's parent involvement theory. We reached relevant conclusions through quantitative analysis. However, it is impossible to specifically reveal how parent involvement activates family advantages, how different dimensions of participation affect extracurricular tutoring and the internal process of parents' tutoring decision-making. If the above questions can be supplemented by qualitative research, the fundamental research will be more informative.

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