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EFFECTS OF FAMILY SOCIOECONOMIC STATUS AND EDUCATIONAL RESOURCES ON CHILDREN'S COGNITIVE ABILITY PERFORMANCE BASED ON PRESCHOOL EDUCATION PERSPECTIVES

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Effects of Family Socioeconomic Status and Educational Resources on Children's Cognitive Ability Performance Based on Preschool Education Perspectives

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Abstract

Under the effects of rapid changes in current social environment and family, family structure gradually changes from past extended family and stem family to nuclear family for matching modern social environment. Preschool children's learning is affected by school education as well as family education. When different family socioeconomic status would affect children's cognitive ability to form the stratification of cognitive ability development, such a phenomenon is growing apart from the philosophy of equality of educational opportunity. Aiming at parents of children in preschool education units in china, as the research objects, total 360 copies of questionnaire are distributed, and 237 valid copies are retrieved, with the retrieval rate 66%. The research results are summarized as below. 1. Children with higher family socioeconomic status present better cognitive ability, explaining the actual effect of family socioeconomic status on current children's cognitive ability to form educational stratification as well as unequal opportunity for preschool education. 2. The higher family socioeconomic status shows the richer family educational resources. It is therefore inferred that children with higher family socioeconomic status reveal better cognitive ability, possibly because of richer family educational resources allowing children receiving more cultural, social, or financial capital stimulation to enhance more cognitive ability. According to the result to proposed suggestions, it is expected to enhance domestic ideal of equality of preschool educational opportunity, allow domestic education parallel to various advanced countries, and achieve the responsibility for cultivating quality citizen in the future.

Keywords: preschool education; family socioeconomic status; educational resource; cognitive ability performance; early childhood education.

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Introduction

Kindergarten and nursery school integration is largely promoted in domestic early childhood education in past years. Such a phenomenon does not simply induce people's attention and emphasis on early childhood education, but also expects to lead early childhood education to a new era. Under the rapid changes in current social environment and family, family structure gradually changes from extended family and stem family, in which grandparents, parents, or brothers and sisters could take care and educate children, into nuclear family for matching modern social environment. Besides, traditional mainstream phenomenon of men being breadwinners and women being homemakers is changed into double career family with parents engaging in workplaces. Meanwhile, increasing labors of modern mothers also change kindergartens, from family, into the important environment for preschool children's growth and learning. Modern parents, due to unfixed off-work time, might not be able to pick up children. On the other hand, children talent learning related institutions are rapidly developed possibly because of the social trend of talent learning under the extremely high competition. Businesses instill the ideal of not having children lose at the starting point into parents to have children learn various talents.

Furthermore, preschool children's learning is not simply affected by school education, but is deeply influenced by family education. The closest microsystem to individuals is the closest environment to children, including family, schools, peer groups, and working places. Such a theory supports the existence value of family for preschool children and explains the important influence of family on children development. Relevant research found out the effects of number of books bought for children, parents' participation in children's learning, and education expectation to children on children. Although there are proofs to support that complete family educational resources require good family socioeconomic status, little research on domestic preschool education in past years prove the idea. When different family socioeconomic status would affect children's cognitive ability to form the stratification of cognitive ability development, the phenomenon would grow apart from the philosophy of equality of educational opportunity and further form Matthew effect of the strong being stronger while the weak being weaker. With the perspective of preschool education, the effects of family socioeconomic status and educational resources on children's cognitive ability performance are discussed in this study, expecting to enhance domestic ideal of equality of preschool educational opportunity, have domestic education parallel to various advanced countries, and achieve the responsibility for cultivating quality citizens in the future.

Literature review

Liu *et al.* (2017) covered education, occupation, and income in socioeconomic status (SES). Apparently, family socioeconomic status referred to parents' education, parents' occupation, and family income. Chen *et al.* (2019) mentioned that there was little domestic research on preschool children related cognitive ability, but the rich research related to the academic achievement of students above elementary schools pointed out deep effects of family socioeconomic status on students' academic achievement. Early *et al.* (2017) proposed the concept of educational resources, referring to parents' functions as promoting family study environment and enhancing children's learning skills, motivation, humanities, and material resources. It mainly assumed that parents with higher socioeconomic status would present more capabilities and motivation to provide children with educational resources for further enhancing the educational achievement. The empirical analysis result also proved such an assumption. Lam & McBride (2018) stated that, in family socioeconomic status, parents' education would affect the occupation and income as well as family educational resources, i.e. investment in family cultural capital, family social capital, and family financial capital, as the sum of material and spiritual wealth of the family. Acord (2017) discovered that children with high family socioeconomic status, due to more family resources from parents, e.g. health care, environment, and materials, could be expected to enhance the cognitive development. Janzen *et al.* (2017) also discovered in the research that family educational resources, during the summer vacation from kindergartens upgrading to grade one of elementary schools, could benefit children's cognitive development. Tse *et al.* (2017) revealed that children with higher parents' education years, father's position, and family income appeared higher participation in cram schools possibly, because of higher education expectation of children, to be willing to invest more educational resources in children. Such factors might affect family socioeconomic status to further form individual social stratification. The hypothesis is therefore proposed in this study.

H1: Family socioeconomic status presents positive and significant effects on educational resources.

Ha *et al.* (2017) pointed out the correspondence among family cultural capital, social capital, and financial capital with educational resources. Sinclair *et al.* (2018) defined social capital as social structural resources of individual capital to implement the action goal, i.e. individual interpersonal relationship. Meylana *et al.* (2018) considered that an individual would form some relationship with others in the society to further form "social network". From the aspect of education, Johnson *et al.* (2017) divided social capital into in-family social capital, i.e. parent-child relationship and parents' investment in and expectation of children, and off-family social capital, i.e. parents' social network. For instance, parents presenting better interpersonal relationship with neighbors, communities, and

schools had more social capital to help children's educational achievement. Martin & Lazendic (2018) also regarded family social capital as the key in enhancing children's educational achievement. Georgiou & Kyza (2018) explained that social capital contained individual social network and relationship between individual and institution and could transform social relationship or network relationship into valuable resources and opportunities in the society. Ledger & Merga (2018) referred financial capital to helping children's learning with family finance or income; parents applied financial capital to create good learning environment for children to acquire learning advantage. Banjarnahor *et al.* (2018) also pointed out financial capital as individual wealth, material resources, and production tool possessed, which could be easily changed into other forms of capital. Hodis (2018) mentioned that cultural, social, and financial capital could be mutually transformed. For instance, financial capital was the root of cultural and social capital, financial capital could be transformed into cultural capital, cultural capital could be transformed into social capital, and cultural and social capital could be return to financial capital. Seo *et al.* (2019) indicated that children with high family socioeconomic status, compared to children with low family socioeconomic status, presented obvious difference in family educational resources during the summer vacation from kindergartens upgrading to grade one of elementary schools. It further resulted in educational stratification of children in the learning in summer vacation, due to different educational resources caused by distinct socioeconomic status. It explained that children with high family socioeconomic status acquired relatively more educational resources in summer vacation, e.g. parents accompanying children's reading and talent learning. Such factors would remarkably and positively affect children with different family socioeconomic status to result in distinct cognitive ability and form educational stratification. Zhu *et al.* (2017) stated that children with better family socioeconomic status received more educational resources to present better cognitive ability when entering elementary schools. On the contrary, children with worse family socioeconomic status received fewer educational resources that the cognitive ability, when entering elementary schools, was worse than those with good socioeconomic status. The factor of family socioeconomic status in the simulation of educational resources to form the difference in children's cognitive ability was called early childhood education stratification. The hypothesis is then proposed in this study.

H2: Educational resources show positive and remarkable effects on cognitive ability performance.

Dan (2017) regarded cognitive ability as learners relying on cognitive ability to cope with external requirements or learning goals and processing distinct information to acquire knowledge, skills, and experiences. Accordingly, complete cognitive ability was the internal basis of learning to provide necessary and learning related resources for learning activities. Prescott & Mackie (2017) explained children's cognitive ability as the ability corresponding to daily life and school

life as well as the basic ability for children's learning achievement in the future. Lee & Stankov (2018) indicated that growing in a peaceful and ordered family was an extremely important environmental factor in children's cognition function. Apparently, factors of family background were gradually emphasized in research on cognitive ability development; it also revealed that the effect of family environment on children's cognitive ability could not be neglected. Brysbaert *et al.* (2017) also found out the important effect of family resources on children's cognitive development. Research on preschool children's cognitive ability was relatively less than those on education above elementary schools; nevertheless, research on elementary school students' academic achievement showed deep influence of family socioeconomic status on students' academic achievement. Hinton *et al.* (2017) applied social theory concept (i.e. cultural capital, social capital, and financial capital) to explain the correlation between socioeconomic status and learning performance, educational status, educational achievement, and deeply discussed the problem of equality of educational opportunity to further develop research on learning performance, educational status, or educational achievement as well as complete the research model. Wang & Liou (2017) mentioned that individuals with different family background, due to the received family cultural capital, family social capital, and family cultural capital, would be affected the education acquisition and learning performance, including academic performance, continuing higher education, and final acquisition of education years. It is therefore assumed in this study that

H3: Family socioeconomic status reveals positive effects on cognitive ability performance.

Methodology

Operational definition

Family socioeconomic status. Referring to Chen *et al.* (2019), family socioeconomic status is extracted three dimensions in this study: (1) Education: formal school education of parents; (2) Occupational level: parents' occupational level; (3) Economic condition: parents' actual family conditions.

Educational resources. Referring to Jung & Lee (2018), three dimensions are extracted for educational resources in this study: (1) Talent learning: number of talent learning items and expenditure; (2) Number of books: number of books provided for children's reading; (3) Participation in learning: degree of parents accompanying children's learning; (4) Education expectation: parents' expectation of children's future education.

Cognitive ability performance. Referring to Cheng *et al.* (2019), cognitive ability performance is measured, with the single dimension, in this study for investigating children' preschool education cognitive ability.

Research sample and object

Aiming at parents of children in preschool education units in china, as the research objects, total 360 copies of questionnaire are distributed, and 237 valid copies are retrieved, with the retrieval rate 66%.

Reliability and validity test

Confirmatory Factor Analysis (CFA) is an important part in SEM. The measured model should be tested before the structural model evaluation in the two-stage model modification for preceding CFA. When the measured model fit is acceptable, the second-step SEM evaluation is preceded. In the analysis of dimensions with CFA, the factor loadings of dimensions appear in .70~.90, the composite reliability shows .80~.90, and the average variance extracted reveals .60~.70, conforming to the standards of 1.factor loading higher than .5, 2.composite reliability higher than .6, and 3.average variance extracted higher than .5. The dimensions therefore present convergent validity.

Result and Discussion

Structural model analysis

Structural model analysis contains goodness-of-fit analysis of research model and overall research model explanatory power. In this case, scholars' opinions are referred to this study, including 7 numerical indices for testing overall model fit, namely chi-square (χ^2) test, χ^2 -degree of freedom ratio, goodness-of-fit index, adjusted goodness-of-fit index, mean approximate root mean square error, comparative fit index, comparative hypothesis model, and independent model chi-square difference. The overall result analyses are organized in Table 1.

In sum, to test model fit with χ^2 -degree of freedom ratio, the ratio is the smaller the better; this research model shows χ^2 -degree of freedom ratio < 3 (1.73). GFI and AGFI are better close to 1, and do not have absolute standards to judge the model fit. GFI > .9 and AGFI >.8 are acceptable; this research model presents GFI and AGFI .95 and .88, respectively. RMSEA in .05-.08 stands for a good model with reasonable fit; this research model reveals RMSEA .03. The allowable standard of CFI is > .9; this research model appears CFI .92. NFI should be at least higher than .9; this model shows NFI .90. Overall speaking, the goodness-of-fit indices conform to the standards, revealing the research results being acceptable. The research sample data therefore could explain the actual observation data.

From above overall model fit, the model structured in this study presents favorable fit with observation data, showing that the theoretical model could fully explain the observation data. As a result, the correlation coefficient and the

coefficient estimate of family socioeconomic status to educational resources and cognitive ability performance could be understood, after the test of model fit.

Table 1. Research model fit analysis

Fit Indices	Allowable range	This research model	Model fit judgment
χ^2 (Chi-square)	The smaller the better	19.86	
χ^2 -degree of freedom ratio	<3	1.73	match
GFI	>.9	0.95	match
AGFI	>.8	0.88	match
RMSEA	<.08	0.03	match
CFI	>.9	0.92	match
NFI	>.9	0.90	match

The research data are organized in Table 2, the complete model analysis results reveal that three dimensions of family socioeconomic status (education, occupational level, economic condition) could significantly explain family socioeconomic status ($t > 1.96$, $p < 0.05$) and four dimensions of educational resources (talent learning, number of books, participation in learning, education expectation) could remarkably explain educational resources ($t > 1.96$, $p < 0.05$). Apparently, the overall model reveals good preliminary fit.

In terms of internal fit, family socioeconomic status appears positive and notable correlations with educational resources (0.88, $p < 0.01$), educational resources shows positive and significant correlations with cognitive ability performance (0.83, $p < 0.01$), and family socioeconomic status presents positive and remarkable correlations with cognitive ability performance (0.85, $p < 0.01$) that H1, H2, and H3 are supported.

Table 2. Overall linear structural model analysis result

Evaluation item	Parameter/evaluation standard		result
preliminary fit	family socioeconomic status	education	0.77**
		occupational level	0.72**
		economic condition	0.75**
	educational resources	talent learning	0.73**
		number of books	0.78**
		participation in learning	0.74**
		education expectation	0.71**

internal fit	family socioeconomic status→educational resources	0.88**
	educational resources→cognitive ability performance	0.83**
	family socioeconomic status→cognitive ability performance	0.85**

Note: * stands for $p < 0.05$, ** for $p < 0.01$, and *** for $p < 0.001$.

Conclusion

The research results reveal that children with higher family socioeconomic status appear better cognitive ability. It explains that family socioeconomic status indeed would affect modern children's cognitive ability to form educational stratification. It also reveals current unequal opportunity for preschool education. Higher family socioeconomic status enriches family educational resources. It is inferred that children with higher family socioeconomic status present better cognitive ability, possibly because the richer family educational resources provide children with more cultural, social, or financial capital to promote the cognitive ability. Unequal opportunity for preschool education might result in unequal opportunity for children's future learning stages to further form Matthew effect of the strong being stronger and the weak being weaker. Such a phenomenon disobeys the principles of social justice and fairness to result in children bearing unequal treatment on education opportunity or situation. Children with different family socioeconomic status, due to distinct cognitive ability, would appear helplessness after entering elementary schools to cause low learning willingness and further affect the behavior or withdrawing behavior, e.g. inferiority, bad stress resistance, and adverse social behavior. Children's cognitive ability is required for daily life and school life as well as the basic competence for future learning achievement. From this point of view, it would cause various dilemmas in the further learning and might be adverse to the future achievement to appear anomalous problems. Furthermore, if above phenomena are resulted from the difference in family socioeconomic status to cause resource restrictions, children with short family educational resources might fall behind those with higher socioeconomic status on cognitive ability, and the future physical and spiritual development might influence health & nutrition, social behavior, and psychological stress.

Suggestions

From the research results and findings, the following practical suggestions are proposed in this study.

- 1) Children with lower family socioeconomic status could be provided more book resources or fix time for parents and children borrowing books to provide more reading opportunities for children with low family socioeconomic status and make up the disadvantage of children not being able to acquire book resources. Children with low family socioeconomic status could also increase the social or social stimulation through learning activities with scaffolding on cognitive learning to enhance the cognitive ability, slow down the difference in education stratification, and further reduce unequal opportunity for education.
- 2) The government should largely establish kindergartens or increase libraries and parent-children institutions specifically for preschool children. Moreover, survey on children's family socioeconomic background should be implemented to understand the needs of family with low socioeconomic status, offer direct and necessary support for children with disadvantaged family receiving more subsidies and care, and emphasize and support preschool education.
- 3) Service for disadvantaged family could be largely promoted domestically; for instance, schools, welfare institutions, and social work units could assist in the promotion and teaching, encourage parents' parenthood ability and education ability, and have specialists visit disadvantaged family to understand the real family conditions. Aiming at children's family conditions, direct and necessary support are offered, including financial support and more family care or book resources. In this case, it does not simply facilitate the idea of equality of preschool educational opportunity and have domestic education parallel with various advanced countries, but also achieve the responsibility for cultivating quality citizens in the future.

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