



Exploratory Factor and Reliability Analysis of the Instrument Measuring Parents' Educational Behaviour

Zhenyu Li¹, Sheerad Sahid*², Mohamad Zuber Abd Majid³

ARTICLE INFO

Article History:

Received: 30 August 2024

Received in revised form: 15 November 2024

Accepted: 20 December 2024

DOI: 10.14689/ejer.2024.114.06

Keywords

Parents' educational behaviour, reliability, validity, parental involvement,

ABSTRACT

Purpose: Parents' educational behaviour is essential in shaping children's educational outcomes, and as an effective supplement to school education, it further extends the function of education. More importantly, parents' educational behaviour also plays a unique role in promoting educational equity and delivering cultural values. This study examines the factor structure and internal consistency of parents' educational behaviour. **Methods:** This study used statistical techniques to analyse the validity and reliability of the instrument measuring parents' educational behaviour. All the three dimensions used to measure parents' educational behaviour in this study were adapted from previous research. A total number of 104 parents were involved in this research.

Findings: After the procedure of the exploratory factor analysis, three constructs of parents' educational behaviour were identified, which were education investment, parental involvement and educational choice respectively. The findings revealed that the parents' educational behaviour was a multidimensional construct. Furthermore, the Cronbach's alpha coefficient of the instrument showed a high internal consistency. **Implications for Research and Practice:** Thus, the parents' educational behaviour can be examined using this reliable and valid measurement tool. In addition, this study demonstrated the importance of parental involvement during family activities. This study would enrich the domain of parents' educational behaviour and give useful insights to policy makers and educationists to design strategies that promote educational equity through parents' roles.

© 2024 Ani Publishing Ltd. All rights reserved.

Introduction

Parental educational behaviour refers to a series of actions, strategies and attitudes taken by parents or guardians in the process of children's education (Dohme et al., 2020; Hopcroft & Martin, 2016; Rainham et al., 2022; Sangawi et al., 2018; Siriphon & Li, 2023).

¹Faculty of Education, Univesiti Kebangsaan Malaysia

ORCID: <https://orcid.org/0009-0005-3747-567X>, Email: p117774@siswa.ukm.edu.my

² Faculty of Education, Universiti Kebangsaan Malaysia

ORCID: <https://orcid.org/0000-0003-2401-4629>, Email: sheerad@ukm.edu.my

³ Faculty of Education, Univesiti Kebangsaan Malaysia

ORCID: <https://orcid.org/0000-0001-5434-5926>, Email: mzuber@ukm.edu.my

*Correspondence: sheerad@ukm.edu.my

These behaviours are usually influenced by social, cultural, economic and policy environment, and are directly related to the learning effect and overall development of children. In promoting the SDGs (Sustainable Development Goals), the important role of parents' educational behaviour in promoting sustainable education and quality education has often been underrated (Camarata et al., 2022). Bronfenbrenner's ecological system theory identified the microsystem as the most influential level which emphasized family as the immediate environment (Bronfenbrenner, 1979). Based on this theory, the essential function of parents' behaviour in complementing comprehensive education was supported since the parents' behaviours or actions directly affect children's development strategy. Scholars have also found evidence that the parents' behaviour towards education is affecting their child's future.

The most direct form of parental educational behaviour is economic investment, including the allocation of financial resources for tutoring, tuition, and extracurricular activities. Evidence can be gathered from the fact that family educational expenditure gradually makes a major contribution in consisting of total household expenditure in China (Y. Yang et al., 2023). The Chinese education system encompasses various levels of education, starting from preschool, primary school, middle school, high school or secondary school, and tertiary education. Normally, after three years of preschool period, the children will officially get enrolled into the compulsory education period. The compulsory education period can be divided into two parts. One is primary education, and the other is middle school. In contrast with the compulsory education stage, which does not require tuition fees, during the high school education stage, parents not only have to pay the regular schooling tuition fees but also additional fees for their children to participate in off-campus tutoring including subject tutoring and interest-based tutoring. The overall participation rate in extracurricular tutoring for students is 43.3%, with an average cost of approximately 21,515 Chinese Yuan (CNY) per participating student. Based on the estimated enrolment for each stage, the total scale of the national extracurricular education industry exceeds 490 billion yuan.

Such a large number of participating students reflects the extent to which parents rely on extracurricular education. In other words, the education expenditure has laid a heavy burden on family educational expenditure. Nevertheless, China is continuously providing society with quality education and life-long education (Guo et al., 2019). The plan of "China's Education Modernization 2035" proposed by the Central Committee of the Communist Party of China and the State Council in 2019, aimed at establishing a high-quality education system rooted in Chinese characteristics, with a particular emphasis on the integration of family education and social education. Nevertheless, as the Law of Promotion of Family Education was passed by the National People's Congress on October 23, 2021, it was also seen as a starting emphasis of family education in China.

Apart from the changes in the level of educational investment and the increasing emphasis on family education, parents have gradually recognised that their active involvement in education is not only a key factor influencing their children's future development but also an important determinant of educational outcomes (Akellot & Bangirana, 2019; Aquino et al., 2019). Along with the fact of rapid development of the economy and the rise in per capita income, an increasing number of parents have embraced a more diversified and international approach to planning their children's education. In

line with the trend of educational globalisation, many parents have gradually chosen to send their children abroad for studies (Cebolla-Boado et al., 2017; Zhou et al., 2019).

However, despite the challenges parents face regarding high educational expenditure, awareness of the impact of parental involvement and the decision to pursue overseas studies, it is important to recognise how these factors can influence parents' educational behaviour. Since parents were considered the first and life-long mentors of their children, their educational behaviour influenced the children's development, which contributed to improvements in educational quality (Debs & Cheung, 2021; Zhu, 2019). Besides, limited studies focused on a particular group of parents having children of high school age. There exists an obvious gap in the present research that focuses on measuring parents' educational behaviour.

There is limited research that investigates parents' educational behaviour as a multi-dimensional variable and a limited reliable instrument can be used for measuring this variable. Under the domain of Chinese parents' educational behaviour, three dimensions (education investment, parental involvement, and educational choice) characterise this multidimensional variable. This study intends to adapt and test the measurement for assessing parents' educational behaviour. This study argues that the parents' behaviour towards education is an interdisciplinary concept which has many dimensions, so the validating process for the adapted instrument is a must. There is no consensus among researchers regarding what is the concept of parents' behaviour towards education and how it has been operated. Besides, this study is the first one that uses a multidimensional measurement to determine parents' behaviour towards education.

Furthermore, for the purpose of establishing an understandable survey which can gather accurate data for larger-scale investigation (Hassan et al., 2006), this study was carried out. Under this requirement, the purpose of this study was to conduct an exploratory factor analysis (EFA) for preliminary validation of the scale. Validity and reliability were tested during the process of EFA using data gathered from the study. After the EFA was conducted, the items not fulfilling the required standard were deleted from the instrument. A total of 116 respondents were initially involved in the study, only 104 valid answers remained for the final study and 12 responses were excluded during data screening.

Literature Review

Parents' Educational Behaviour

Parents' educational behaviour was complex and multi-dimensional. Education investment is considered to be an important approach to improving human capital, which plays an important role in determining an individual's future living standard (Bartholomae et al., 2019; Becker, 1993; Biscaia et al., 2017). Thus, the rapidly increasing amount of parents' educational investment and the growing significance have attracted more and more researchers' attention. Evidence can be gathered from prior research, which has demonstrated that parents' socioeconomic status (SES), including their educational background, occupation, and income, has a significant impact on children's educational outcomes (Abdelghani et al., 2022; Abimpaye et al., 2019; Abraha, 2022). Other studies have

investigated the effect of specific parenting practices, such as communication, companionship, monitoring, and expectations, on the academic performance of children while taking control of external factors from parents' side (Abadama, 2018; Abbiati & Barone, 2016; Aguirre-Dávila et al., 2021).

Under the circumstances, the educational spending of children contributes the major consistence of total household expenditure in China (M. Yang et al., 2023). Data from the 2017 report of China Institute for Educational Finance Research-Household Survey (CIEFR-HS) proved that households in China dedicated 13.2% of their total consumption to annual educational expenditure per student for children under high school. This highlights the importance of Chinese parents' educational investment, particularly as a significant portion of their income is allocated to educational expenses.

Parental involvement

Parental involvement not only affects children's academic performance and development but also enhances children's self-esteem, self-efficacy, and learning motivation, making them more willing to engage in learning and achieve better results (Aavik & Úmarik, 2019; Abbiati & Barone, 2016). Additionally, parental involvement can help children develop non-academic skills such as social skills, emotional intelligence, and leadership, which can improve their living quality. As parents and schools are the major aspects of children's main environments when considering the education. The scenario of parental involvement in education is often divided into home-based or school-based.

From the home-based side, previous studies have indicated that the low parental involvement is one of the obstacles that prevent the education quality in Malaysia. Another finding of this study is that the parents who work extra hours to support the living standard in the family, have limited quality time to spend with their children. It is often found that parenting style and parental involvement act as mediators that influence the relationship between parental education and family income and children's cognitive school readiness. The study further points out that an active parenting style as well as high-quality parental involvement in early childhood education may have the potential to counteract the detrimental impact of economic disadvantages on children's cognitive readiness skills. Another study focusing on how the helicopter parenting relates to the existing parenting behaviours and parenting styles, suggests that the helicopter parenting is those who fit the authoritative parenting profile. Although high level of parental involvement is usually linked with positive outcomes but not for helicopter parenting. In a word, parental involvement is more and more important along with the trend of growing attention in family education.

Educational choice

Due to high stakes examination pressures, credentialing inflation and unique cultural expectations, parents now sending their children abroad. A study explores the new mode in studying-led immigration among Chinese families for providing their children with international education in Thailand (Siriphon & Li, 2023). Another study focusing on the impact of study abroad program duration indicates that the longer students be exposed under the environment abroad, the better they perform in cultural development and

individual development (Dwyer, 2004). The most meaningful advantage is in language learning and academic disciplines when a specific culture pedagogy is adopted in at least one-year time of studying abroad. Similar results have been given by a study focusing on short-term study abroad programs that a diverse range of experiences among Chinese heritage language learners in terms of their heritage language identity development during the overseas program. Some actively engaged with their heritage language identity, while others maintained an outsider stance and showed limited development in this aspect (Tong & Tsung, 2023).

Studies have also been done regarding the issue of the reason behind the large number of international students from China using the university-level data from the 2014 UK Higher Education Statistics Agency and the Higher Expectations Survey (Cebolla-Boado et al., 2017). The study focuses on the factors at the university level that influence the selection of British universities by Chinese international students. Based on nationally representative evidence, university prestige stands as the most crucial determinant shaping the choice of British universities among Chinese students. Furthermore, other institutional attributes, such as the broader social and cultural opportunities provided by the universities, also play a role in influencing their decisions. In a word, the overseas studying experience may seem like a social capital and cultural capital that enhances social mobility. Parents' decisions on whether or not to send their children abroad still need more estimation for it is a complex choice involving many factors.

Methodology

Research Design

This quantitative research involved measuring the exploratory factor analysis (EFA), to examine the pattern of factor structure, and Cronbach's α coefficient to determine validity and reliability of the research instruments measuring parents' educational behaviour. A pilot study was an integral part of this research that involved parents having children attending high school.

Research Sample

Data was collected from 104 parents in Guangdong province of China by an online platform called Questionnaire Star. Random sampling for collecting data was utilized in this study. The respondents' demographic information is presented in Table 1. Out of the total sample, 57.7% (n=60) of the respondents were female, and the rest 42.3% (n= 44) of the respondents were male. A majority of the respondents were married with a percentage of 88.5% (n=92). Among the educated group, 43.3% (n=45) had college diploma, followed by undergraduates 32.7%(n=34).

Table 1

Demographic information

Demographic variable	Frequency	Percentage
Gender	Male	44
	Female	60

Table 1*Demographic information (cont...)*

Demographic variable		Frequency	Percentage
Age	under 38	19	18.3
	38~43	42	40.4
	44~49	23	22.1
	50~55	13	12.5
	above 55	7	6.7
Marital status	Married	92	88.5
	Divorced (single dad)	4	3.8
	Divorced (single mom)	8	7.7
Family Income Level (CNY/year)	below 120,000	27	26
	120,000~192,000	47	45.2
	192,000~408,000	18	17.3
	408,000~720,000	9	8.7
	above 720,000	3	2.9
Educational level	Middle school and below	8	7.7
	High school/Secondary school	11	10.6
	College with diploma	45	43.3
	Undergraduate	34	32.7
	Postgraduate (Master/PhD)	6	5.8
Number of children	One	56	53.8
	Two	30	28.8
	Three	13	12.5
	Four	5	4.8

Research Instrument and Procedure

This study examined the three different dimensions of the parents' educational behaviour, including educational investment, parental involvement and educational choice (Hindman & Morrison, 2012; Bodycott, 2009). The measurement was adapted from the previous instruments developed by the CIEFR-HS survey. Before the EFA process, the content validity was already satisfied through expert validation. Considering that the respondents of this study were Chinese parents having children in high school, the content validators comprised of university professors; and directors of psychology centres in China. The selection criteria for experts encompassed possessing pertinent professional experience within the corresponding field (Rubio et al., 2003). The experts involved in this validation process were lecturers with a minimum degree of master's and were devoted to the education industry for many years. The establishment of an expert panel evaluated the elements of the instrument and assigned ratings based on their appropriateness and alignment with the content domain. All the validators were required to evaluate the relevance and accuracy of each item delivery. Based on the analysis of the scale, it was concluded that each item fulfilled the criteria. The measurement of the parents' educational behaviour scale employed a 7-point Likert rating and consisted of 3 dimensions and 31 items in total.

Data Analysis

In this study, SPSS 26 was used for analysis. The data analysis process can be divided into two stages. First, exploratory factor analysis (EFA) was employed to examine the pattern of factor structure, including the Kaiser-Meyer-Olkin (KMO) measure (KMO value >0.6) of sampling adequacy, Bartlett's test (significance level at $p < .05$) of sphericity, varimax rotation, rotated factor loadings, and percentage of variance explained (Tabachnick & Fidell, 2013). Second, Cronbach's α coefficient, Corrected Item Total Correlation (CITC) and Cronbach's Alpha if Item Deleted (CAID) were used for determining reliability. Hair Jr et al. (2009) indicated that an acceptance level of factor loading exceeds 0.5 for ensuring the accuracy of the measured construct or dimension. Construct validity refers to the fitness of the researcher to translate or transform a concept in the instrument (Taherdoost, 2016). This criterion has two components, discriminant validity and convergent validity. Discriminant validity indicates that there should be no correlation between each construct, while convergent validity indicates that the minimum item loading is 0.4, no cross-loading item above 0.4 (Engellant et al., 2016). If the measure is useful in predicting the performance or possible behaviour, then it is considered to be a criterion validity (Heale & Twycross, 2015). The internal consistency was measured by Cronbach's alpha coefficient, which ranges from 0 to 1 and was used to show the instrument's reliability. It was recommended that the value of Cronbach's alpha coefficient exceed 0.7 (Kline, 2011).

Results

Exploratory Factor Analysis Results

According to Table 2, the Kaiser-Meyer-Olkin (KMO) was used for measuring the sample adequacy. In this study, the value of 0.863 (>0.7) satisfied the requirement (Kline, 2011). The Bartlett's test result also indicated that this instrument was accurate for the criteria with a significance level of $p < .001$. In other words, this significance level below 0.001 confirms sufficient inter-correlations among the dataset to proceed with factor analysis. The results presented significant relationships among the examined variables and the collected data was suitable for factor analysis.

Table 2

Kaiser-Meyer-Olkin and Bartlett's Test

KMO Measure	Sampling Adequacy	0.863
Bartlett's Test of Sphericity	Approx. Chi-Square	1927.438
	df	351
	Sig.	0.000

The factor analysis in the EFA presented in Table 3 indicated that all 27 items were related to parents' educational behaviour (PEB). As long as the communalities of items exceeded the cut-off value (>0.3), it was recommended to include the item in the scale (Tabachnick & Fidell, 2013). In the EFA process, the eigenvalues of all three constructs of PEB were above 1 as it is evident from the findings viz., 25.122%, 22.421%, and 14.793% of the total variance accounted for each dimension respectively. The cumulative variance of 62.335% fulfilled the requirement of acceptance level (Hair Jr et al., 2009). Item 1 to item 11

were validated for measuring the first dimension (education investment) of parents' educational behaviour with a factor loading above 0.5, ranging from 0.661 to 0.818. The second dimension (parental involvement) was measured through items 12 to 21 with factor loading ranging from 0.663 to 0.813. The third dimension (education choice) was confidently measured by item 22 to item 27 with factor loadings ranging from 0.734 to 0.810. According to Hair et al. (2009), all of the items were recommended to remain for they fulfilled the criteria.

Table 3

EFA Results of Parents' Educational Behaviour (PEB).

Item	Component			Communalities
	1	2	3	
	<i>Education Investment</i>			
PEB1	0.811			0.670
PEB2	0.782			0.636
PEB3	0.791			0.686
PEB4	0.666			0.521
PEB5	0.661			0.526
PEB6	0.757			0.620
PEB7	0.798			0.679
PEB8	0.818			0.709
PEB9	0.764			0.592
PEB10	0.788			0.623
PEB11	0.759			0.630
	<i>Parental involvement</i>			
PEB12		0.741		0.630
PEB13		0.813		0.682
PEB14		0.767		0.645
PEB15		0.754		0.637
PEB16		0.716		0.515
PEB17		0.777		0.635
PEB18		0.695		0.508
PEB19		0.663		0.543
PEB20		0.789		0.657
PEB21		0.788		0.703
	<i>Educational Choice</i>			
PEB22			0.810	0.682
PEB23			0.734	0.572
PEB24			0.803	0.686
PEB25			0.772	0.660
PEB26			0.771	0.597
PEB27			0.754	0.587
Eigenvalue	9.674	3.982	3.175	
% of Variance	25.122	22.421	14.793	
Cumulative %	25.122	47.542	62.335	

Cronbach's Alpha Coefficient

The Cronbach's alpha results presented in Table 4 indicated the high reliability for all three constructs of parents' educational behaviour. The Cronbach's alpha coefficient for each dimension was 0.937 (education investment), 0.924 (parental involvement) and 0.881 (educational choice) respectively. In addition, it can be inferred that the internal consistency level of the three dimensions was high. The value of CITC was above 0.6, which met the required threshold of 0.4. The CAID value of each item represented a strong internal consistency, which indicated a high level of agreement among all the items corresponding to the specific component.

Table 4

Reliability Test Results

Item	Mean	Std. Deviation	CITC	CAID	Cronbach's Alpha	N of items
<i>Education Investment</i>						
PEB1	4.53	1.582	0.762	0.929	0.937	11
PEB2	4.62	1.668	0.742	0.930		
PEB3	4.81	1.488	0.779	0.929		
PEB4	4.67	1.561	0.649	0.934		
PEB5	5.20	1.417	0.655	0.934		
PEB6	4.93	1.483	0.737	0.930		
PEB7	4.91	1.442	0.765	0.929		
PEB8	5.03	1.424	0.796	0.928		
PEB9	4.91	1.435	0.703	0.932		
PEB10	4.44	1.659	0.723	0.931		
PEB11	4.38	1.725	0.748	0.930		
<i>Parental involvement</i>						
PEB12	5.34	1.267	0.718	0.916	0.924	10
PEB13	5.38	1.216	0.758	0.914		
PEB14	4.91	1.224	0.733	0.915		
PEB15	5.23	1.248	0.713	0.916		
PEB16	5.16	1.247	0.619	0.920		
PEB17	5.18	1.260	0.733	0.915		
PEB18	5.07	1.522	0.651	0.920		
PEB19	5.04	1.570	0.670	0.919		
PEB20	5.14	1.471	0.755	0.913		
PEB21	4.64	1.564	0.785	0.912		
<i>Educational Choice</i>						
PEB22	4.89	1.672	0.722	0.856	0.881	6
PEB23	4.91	1.527	0.639	0.869		
PEB24	5.00	1.666	0.742	0.852		
PEB25	4.72	1.651	0.717	0.856		
PEB26	4.80	1.754	0.650	0.868		
PEB27	5.01	1.715	0.677	0.863		

Discussion

This research conducted a study to evaluate the validity and reliability of the scale for parents' educational behaviour. The EFA analysis grouped 27 items statements into three dimensions (education investment, parental involvement, and educational choice) with rotated factor loading. Based on the EFA results, each item of the constructs was validated, and the internal consistency was assessed. The findings show positive evidence of the scale validity to conduct research. In addition, the Cronbach's alpha coefficients for all three dimensions were above 0.8 (>0.7), indicating a high level of reliability. The result supports that the education investment is an important component of parents' educational behaviour. The codirectional increasing trend is also evident in China's increasing fiscal expenditure on education, China's national fiscal spending on education has consistently represented no less than 4% of its gross domestic product for nine consecutive years since 2012 (Lu, 2024).

The study also provides evidence that parental involvement is another important determinant of parents' educational behaviour. In China, the research focusing on parental involvement often refers to the comprehensive utilisation of internal and external resources of parents to participate in cultivating their children, including the comprehensive efforts of cognition, emotion and behaviour in the process of education (Le, 2023; Y. Yang et al., 2023).

In a word, the results are consistent with previous research that parents' educational behaviour can be related to the following dimensions, including parents' educational investment, parental involvement and parents' educational choices (Lai et al., 2022; Luo & Chan, 2022; Siriphon & Li, 2023; Tong & Tsung, 2023; M. Yang et al., 2023).

As parents' educational behaviour is usually influenced by the social, cultural, economic and policy environment, and is directly related to the learning effect and overall development of children (Dohme et al., 2020; Hopcroft & Martin, 2016; Rainham et al., 2022; Sangawi et al., 2018; Siriphon & Li, 2023). It is important to investigate the factors that would influence such a series of actions, strategies and attitudes taken by parents in the process of children's education.

Conclusion

The purpose of this study is to validate the scale of parents' educational behaviour through a study in the Guangdong province of China. The instrument was adapted from the previous research and the validity and reliability of this instrument were established through EFA and Cronbach's alpha coefficient. This reliable scale for measuring parental educational behaviours held practical significance in providing deeper insights into current parents' behaviour research. This study filled up the gap in parents' behaviour in education scope, that it provided a reliable and validated scale for measuring parents' educational behaviour. It was deemed necessary to identify and adapt existing scales to meet the needs of diverse studies. Therefore, this study aimed to encourage further research to put efforts into the field of parents' educational behaviours, promoting the broader application of the scale in varied contexts. Additionally, it sought to inspire the development of new tools specifically designed to evaluate parents' educational behaviours.

One of the limitations of this study is that the data was only collected within one single province of China, which may not capture the comprehensive information that may impact its applicability to other regions. Furthermore, future researchers can conduct follow-up qualitative research to better understand parents' main concerns regarding educational behaviour. In addition, as this study only involves limited participants, future study is recommended to conduct research involving more participants from different backgrounds.

Parents' educational behaviour is a complex multi-dimensional variable. This validated scale can be used to better measure parents' educational behaviour confidently. It also would be helpful for policymakers and society to evaluate the effectiveness of implementing policies that regulate parents' educational behaviour. In addition, this study demonstrated the importance of parental involvement during family activities. It would benefit those researchers who are interested in this field. This study provides a reliable method for measuring senior high school parents' educational behaviour and enriches the research topic of parents' educational behaviour.

References

- Aavik, K., & Ümarik, M. (2019). The 'exceptional male teacher' and the 'vulnerable male student': constructions of men and masculinities in vocational education and training in Estonia. *Journal of Vocational Education & Training*, 72(1), 115-135. <https://doi.org/10.1080/13636820.2019.1586751>
- Abadama, D. S. (2018). The Role of Education in Attaining Sustainable Development in Sub-Saharan African Nations. In *Advances in Electronic Government, Digital Divide, and Regional Development* (pp. 114-129). IGI Global. <https://doi.org/10.4018/978-1-5225-3247-7.ch006>
- Abbiati, G., & Barone, C. (2016). Is university education worth the investment? The expectations of upper secondary school seniors and the role of family background. *Rationality and Society*, 29(2), 113-159. <https://doi.org/10.1177/1043463116679977>
- Abdelghani, M., Atwa, S. A., Said, A., Zayed, N. E., Abdelmoaty, A. A., & Hassan, M. S. (2022). Cognitive after-effects and associated correlates among post-illness COVID-19 survivors: a cross-sectional study, Egypt. *The Egyptian journal of neurology, psychiatry and neurosurgery*, 58(1), 77-77. <https://doi.org/10.1186/s41983-022-00505-6>
- Abimpaye, M., Dusabe, C., Nzabonimpa, J. P., Ashford, R., & Pisani, L. (2019). Improving parenting practices and development for young children in Rwanda: Results from a randomized control trial. *International Journal of Behavioral Development*, 44(3), 205-215. <https://doi.org/10.1177/0165025419861173>
- Abraha, M. (2022). Parental Involvement Status in Their Children's Learning: Selam Primary School of Woldia Town, Ethiopia. *Education Research International*, 2022, 1-9. <https://doi.org/10.1155/2022/7536741>
- Aguirre-Dávila, E., Morales-Castillo, M., & Moreno-Vásquez, M. (2021). Parenting, autonomy and academic achievement in the adolescence. *Journal of Family Studies*, 29(1), 63-76. <https://doi.org/10.1080/13229400.2021.1871935>

- Akellot, J., & Bangirana, P. (2019). Association between parental involvement and academic achievement of deaf children at Mulago school for the deaf, Kampala, Uganda. *African health sciences*, 19(2), 2270-2281. <https://doi.org/10.4314/ahs.v19i2.53>
- Aquino, A. M., Sabio, C. J., Vigonte, F. G., & Leon, N. R. D. (2019). Parental Involvement Strategies Vis-à-Vis Academic Performance of Junior High School Students in Mathematics. *International Journal of Information and Education Technology*, 9(11), 815-819. <https://doi.org/10.18178/ijiet.2019.9.11.1310>
- Bartholomae, S., Kiss, D. E., Jurgenson, J. B., O'Neill, B., Worthy, S. L., & Kim, J. (2019). Framing the Human Capital Investment Decision: Examining Gender Bias in Student Loan Borrowing. *Journal of Family and Economic Issues*, 40(1), 132-145. <https://doi.org/10.1007/s10834-018-9603-6>
- Becker, G. S. (1993). *Human Capital*. University of Chicago Press. <https://doi.org/10.7208/chicago/9780226041223.001.0001>
- Biscaia, R., Teixeira, P., Rocha, V., & Cardoso, M. F. (2017). Higher Education, Human Capital, and Regional Dynamics in Southern Europe. In *Advances in Spatial Science* (pp. 323-344). Springer International Publishing. https://doi.org/10.1007/978-3-319-49818-8_14
- Bodycott, P. (2009). Choosing a higher education study abroad destination. *Journal of Research in International Education*, 8(3), 349-373. <https://doi.org/10.1177/1475240909345818>
- Bronfenbrenner, U. (1979). *The ecology of human development: Experiments by nature and design*. Harvard university press. <https://doi.org/10.2307/j.ctv26071r6>
- Camarata, S., Liu, X. L., Lee, W., Li, T., Jiang, F., & Simms, M. (2022). Adapting the UNICEF/WHO Nurturing Care Framework for speech-language pathologists to support Sustainable Development Goal 4. *International Journal of Speech-Language Pathology*, 25(1), 82-86. <https://doi.org/10.1080/17549507.2022.2141327>
- Cebolla-Boado, H., Hu, Y., & Soysal, Y. N. (2017). Why study abroad? Sorting of Chinese students across British universities. *British Journal of Sociology of Education*, 39(3), 365-380. <https://doi.org/10.1080/01425692.2017.1349649>
- Debs, M., & Cheung, H. S. (2021). Structure-reinforced privilege: educational inequality in the Singaporean primary school choice system. *Comparative Education*, 57(3), 398-416. <https://doi.org/10.1080/03050068.2021.1926126>
- Dohme, L.-C., Bloom, G. A., & Knight, C. J. (2020). Understanding the behaviours employed by parents to support the psychological development of elite youth tennis players in England. *International Journal of Sport and Exercise Psychology*, 19(6), 957-974. <https://doi.org/10.1080/1612197x.2020.1827004>
- Dwyer, M. M. (2004). More Is Better: The Impact of Study Abroad Program Duration. *Frontiers: The Interdisciplinary Journal of Study Abroad*, 10(1), 151-164. <https://doi.org/10.36366/frontiers.v10i1.139>
- Engellant, K. A., Holland, D. D., & Piper, R. T. (2016). Assessing convergent and discriminant validity of the motivation construct for the technology integration education (TIE) model. *Journal of Higher Education Theory & Practice*, 16(1). http://www.na-businesspress.com/JHETP/EngellantKA_Web16_1_.pdf
- Guo, L., Huang, J., & Zhang, Y. (2019). Education Development in China: Education Return, Quality, and Equity. *Sustainability*, 11(13), 3750. <https://doi.org/10.3390/su11133750>

- Hair Jr, J. F., Black, W. C., Babin, B. J., & Anderson, R. E. (2009). *Multivariate Data Analysis* (7th ed.). Pearson. <https://www.drnishikantjha.com/papersCollection/Multivariate%20Data%20Analysis.pdf>
- Hassan, Z. A., Schattner, P., & Mazza, D. (2006). Doing a pilot study: why is it essential? *Malaysian family physician: the official journal of the Academy of Family Physicians of Malaysia*, 1(2-3), 70. <https://pubmed.ncbi.nlm.nih.gov/articles/PMC4453116/>
- Heale, R., & Twycross, A. (2015). Validity and reliability in quantitative studies. *Evidence Based Nursing*, 18(3), 66-67. <https://doi.org/10.1136/eb-2015-102129>
- Hindman, A. H., & Morrison, F. J. (2012). Differential Contributions of Three Parenting Dimensions to Preschool Literacy and Social Skills in a Middle-Income Sample. *Merrill-Palmer Quarterly*, 58(2), 191-223. <https://doi.org/10.1353/mpq.2012.0012>
- Hopcroft, R. L., & Martin, D. O. (2016). Parental Investments and Educational Outcomes: Trivers-Willard in the U.S. *Frontiers in Sociology*, 1. <https://doi.org/10.3389/fsoc.2016.00003>
- Kline, R. B. (2011). Convergence of Structural Equation Modeling and Multilevel Modeling. In *The SAGE Handbook of Innovation in Social Research Methods* (pp. 562-589). SAGE Publications Ltd. <https://doi.org/10.4135/9781446268261.n31>
- Lai, T., Liu, F., & Huang, Y. (2022). The Influence of Parental Educational Expectations on Children's Higher Education Attainment: Re-estimation Based on Instrumental Variables. *Frontiers in psychology*, 13, 899348-899348. <https://doi.org/10.3389/fpsyg.2022.899348>
- Le, Y. (2023). A Review of Studies on Parental Participation in China and Abroad. *Advances in Social Sciences*, 12(06), 3270-3276. <https://doi.org/10.12677/ass.2023.126448>
- Lu, W. (2024). "No Less Than 4%": A Policy Review of China's Fiscal Spending on Education, 2000-2020. *ECNU Review of Education*. <https://doi.org/10.1177/20965311241265374>
- Luo, J., & Chan, C. K. Y. (2022). Influences of shadow education on the ecology of education - A review of the literature. *Educational Research Review*, 36, 100450. <https://doi.org/10.1016/j.edurev.2022.100450>
- Rainham, D. G., Bennett, M., Blanchard, C. M., Kirk, S. F., Rehman, L., Stone, M., & Stevens, D. (2022). Parents and Children Should Be More Active Together to Address Physical Inactivity and Sedentary Behaviours. *Frontiers in public health*, 10, 633111-633111. <https://doi.org/10.3389/fpubh.2022.633111>
- Rubio, D. M., Berg-Weger, M., Tebb, S. S., Lee, E. S., & Rauch, S. (2003). Objectifying content validity: Conducting a content validity study in social work research. *Social Work Research*, 27(2), 94-104. <https://doi.org/10.1093/swr/27.2.94>
- Sangawi, H., Adams, J., & Reissland, N. (2018). Effects of parental intervention on behavioural and psychological outcomes for Kurdish parents and their children. *Eastern Mediterranean Health Journal*, 24(5), 459-468. <https://doi.org/10.26719/2018.24.5.459>
- Siriphon, A., & Li, J. (2023). In Pursuit of Children's Education Abroad: China's Middle-Class Families and Parental Flexibility in Transient Migration to Thailand. *Journal of Chinese Overseas*, 19(1), 34-56. <https://doi.org/10.1163/17932548-12341478>
- Tabachnick, B., & Fidell, L. (2013). *Using Multivariate Statistics* (6th ed.). Pearson Deutschland. <https://elibrary.pearson.de/book/99.150005/9781292034546>

- Taherdoost, H. (2016). Sampling Methods in Research Methodology; How to Choose a Sampling Technique for Research. *SSRN Electronic Journal*. <https://doi.org/10.2139/ssrn.3205035>
- Tong, P., & Tsung, L. (2023). Different Trajectories of Heritage Language Identity Development through Short-Term Study Abroad Programs: The Case of Chinese Heritage Learners. *Sustainability*, 15(8), 6392. <https://doi.org/10.3390/su15086392>
- Yang, M., Zezhen, J., & Yuan, Z. (2023). Subject in motion: (de)capitalization and coping strategies of Tibetan "Sea Turtles" in China. *Higher education*, 1-18. <https://doi.org/10.1007/s10734-023-01041-9>
- Yang, Y., Peng, Y., Li, W., Lu, S., Wang, C., Chen, S., & Zhong, J. (2023). Psychometric evaluation of the academic involution scale for college students in China: An application of Rasch analysis. *Frontiers in psychology*, 14, 1135658-1135658. <https://doi.org/10.3389/fpsyg.2023.1135658>
- Zhou, X., Li, J., & Jordan, L. P. (2019). Parental intent for children to study abroad: the role of educational aspiration and children's characteristics. *Cambridge Journal of Education*, 49(6), 789-807. <https://doi.org/10.1080/0305764x.2019.1618244>
- Zhu, Y. (2019). New National Initiatives of Modernizing Education in China. *ECNU Review of Education*, 2(3), 353-362. <https://doi.org/10.1177/2096531119868069>