

The path from home to school: study on migrant workers' children in Haining, Zhejiang Province

Zhengkai Xu^{1, a}, Xiaoling Dai^{2, b *}

^{1,2}Zhejiang University of Technology, China.

^a2590454821@qq.com, ^bxiaoling.dai@qq.com.

Abstract. With the rapid development of urbanization in China, the number of migrant workers is increasing. As a result, the problem of whether children move with them has arisen, which has led to the emergence of a group of children who are in urgent need of child-friendly attention. At the institutional level, the most important measure of the Chinese government is to ensure the enrollment of migrant children, but now the institutional optimization is not enough. For example, the 'enrollment difficulty' still exists, and many migrant children are forced to go to schools far away from home. This also leads to the lack of non-institutional level, such as the long distance to school so that these children cannot go to school independently. Through the data of parent interviews and behavior logs, this study verifies that the transfer of children significantly increases the cost of childcare for migrant workers, indirectly verifies the importance of school distance, and proposes that schools and matching public service facilities should be configured near industrial parks where migrant children are concentrated.

Keywords: Migrant workers' children, path from home to school, child-friendly city, children's independent mobility, public service facilities.

1. Introduction

With the rapid development of urbanization in China, a large number of rural migrants begin to gather in economically developed coastal areas. Among them, the manufacturing-based economic development zone carries a large number of rural migrant population, and the phenomenon of carrying children is more common. Such children are called migrant children. The seventh national census bulletin shows that in 2020, China's floating population was 376 million, accounting for about 26 % of the total population. Migrant workers are the main body of the floating population. Their minor children are composed of migrant children and left-behind children. Their current total population is about 130 million, accounting for 43.6 % of the total number of children in China, of which migrant children account for 23.9 %. That is to say, nearly half of the children in China are directly affected by population mobility. Left-behind children and migrant children are a group of concepts. If migrant workers choose to leave their children at home, then these children will become left-behind children.

Compared with left-behind children, they no longer face the problem of family separation. However, as a unique group derived from China's rural migrant population, migrant children are faced with problems such as social identity, family economic conditions, and migration status^[1]. However, in China, this vulnerable group of children is neglected by theoretical research and related practice.

On the basis of the above background, this study takes Haining City, which has more floating population, as the research area, and takes the general education situation as the starting point. Haining City is known as China's 'leather capital', is a more economically developed county-level city. Because of this, the number of migrant workers in Haining is huge. Through the calculation of the data of the seventh national census, there are 48,400 migrant children from outside the province in Haining City, accounting for 1 / 3 of the number of resident children, far exceeding the proportion of migrant children in the whole country (23.9 %).

1.1 The influence of institutional and non-institutional factors on migrant children

In 2022, the National Development and Reform Commission required in the document to promote the citizenization of agricultural transfer population as the primary task of new urbanization, focusing on deepening the reform of the household registration system for the unsettled population, improving the basic public service system for permanent residence, and improving the integration of agricultural transfer population into the city. At present, the focus of relevant research is mainly on the level of system design. For example, the inflow system is the deep reason for migrant workers to bring their children into the city or not. To a certain extent, the obstacles of education system affect the family structure integrity and family life happiness of migrant workers^[2]; when there is a threshold for educational resources in the inflow area, there are obstacles for the agricultural transfer population to carry school-age children with them^[3]; the provisions on ensuring equal access to compulsory education for migrant workers' children^[4] do not pay enough attention to non-institutional factors. There are also studies that show that although migrant workers provide valuable labor resources for the city, local governments' urban planning decisions may not take this social group into account^[5].

So, will non-institutional factors have an important impact on the migration behavior of migrant workers' children? Existing studies have found that not only include specific individual demographic factors, such as the age of children and parents^[6], the stability of parents' income and occupation, parents' recognition of the city of immigration, etc.^[7]; it also includes the impact of urban facilities and public services on the migration of migrant workers. Both young and middle-aged migrant workers believe that educational facilities are an important determinant of their settlement intentions, which has an important impact on whether they will carry their children with them^[8]. The above shows that non-institutional factors are equally important.

1.2 Child-friendly city

In the 1990s, the concept of "child-friendly city" was formally proposed. The United Nations Children's Fund (UNICEF) and the United Nations Human Settlements Programme (UN-Habitat) jointly launched the Child-Friendly Cities Initiative, which recommended child welfare as an indicator of healthy settlements, democratic societies and good governance, and advocated the construction of child-friendly cities and communities. In 2018, UNICEF integrated and released the "Child-Friendly Urban Planning Handbook."

To date, the Child Friendly Cities initiative has reached 38 countries around the world. Among them, Toronto in Canada, Osaka in Japan, Munich in Germany and Denver in the United States are all successful cases. China officially promoted the concept of child-friendly city in 2009, and it is still in active practice. Shenzhen, Changsha, Beijing, Shanghai, Hangzhou and other cities are actively building.

China is also actively following up on child-friendliness for migrant children. In 2023, migrant children officially entered the field of vision of China's civil affairs departments, expanding the protection content from traditional child adoption and orphan protection to the care services for migrant children and left-behind children. In November 2023, the General Office of the Ministry of Civil Affairs issued the "Civil Law and Regulation System Construction Plan (2023-2027)." In the section on improving the child welfare system, it mentioned 'Establish and improve the care service system for migrant children and left-behind children to ensure that migrant children and left-behind children are properly cared for and better cared for. Protection.'

1.3 Children's independent mobility

In the study of child-friendly cities in the West, a hot word 'children's independent mobility' has gradually emerged. 'Children's independent mobility' refers to the ability of children to walk and play outdoors without adult supervision or help^[9]. In New Zealand, many parents of children believe that modern traffic is very dangerous, not only large but also fast, which makes it very dangerous for children to move freely without parental care^[10]. With the continuous decline of

children 's independent mobility, a large number of studies have examined the physical and social environmental factors that promote or limit children 's ability to act independently ^[11]. A study in Sweden also proved that children need to open the door to play and make friends without being accompanied by adults, which cannot be ignored. Locally, children 's independent mobility was identified as an important indicator of child-friendliness in planning. There are also studies that show that the design of urban space also needs to consider the needs of children in daily life ^[12], which can increase the possibility of children 's independent action.

2. Method

The main purpose of this study is to study the school situation of migrant children from the perspective of architecture. Through the previous research, the author found that ^[13] these migrant workers engaged in the secondary industry, their working hours are very long. Therefore, taking into account the need to take care of migrant children, children 's school and their place of work can not be too far away from the place of residence. If they are too far apart, they will have too much commuting time, resulting in no time to accompany their next generation, and in this case, they often choose to leave their children behind in their hometown. Therefore, in order to continue to explore the relationship between children 's school attendance and their parents ' child-rearing time costs, the author conducted a survey of three new residents ' children 's schools in Haining City, collected and analyzed the school attendance of these migrant children, and understood whether non-independent school attendance activities will increase parents ' child care costs and whether they will affect parents ' willingness to carry their children. To this end, three survey methods are mainly used :

2.1 Policy research method

The education policy of the inflow place often has a great impact on the decision-making of migrant workers whether to carry their children. First, it is determined whether Haining City supports the local schooling of migrant children. In this study, Haining City, which has a large floating population in Zhejiang Province, was selected for policy research. By visiting the government website of Haining City, the enrollment policies of migrant children in Haining City from 2009 to 2023 were collected, collated and compared. It was found that Haining City had put forward the concept of ' new residents ' children ' in 2009, and constantly introduced and improved policies to alleviate the problem of ' difficult enrollment ' of migrant children.

2.2 Semi-structured interviews

Semi-structured interview is a more flexible interview method, which is between structured interview and unstructured interview. Researchers conduct interviews with key topics of the study, as well as an interview guide. During the interview, questions are asked flexibly according to these key points, and new questions can be discussed^[14].

In the first step, according to the research ideas of this paper and the research of previous scholars, the following hypotheses are proposed :

H1.Non-independent schooling activities for migrant children will increase the cost of parenting for parents.

H2.Non-independent schooling activities for migrant children will reduce the willingness of parents to carry their children.

In the second step, in order to test the above hypothesis, this study conducted interviews with parents of students from three new residents ' children 's schools to analyze the reasons that affect the decision-making of migration.

2.3 Tracing

The tracking method used in this study is log tracking survey. In the field investigation, after obtaining the permission of the investigation target, the school path is followed and recorded, and then the records are analyzed.

2.4 Investigation process

Survey time : April 2023

Location : Haining City, Zhejiang Province

Duration : 6 days

In the initial investigation, Haining Boda School Torch Campus (hereinafter referred to as School A), Haining Boda School Shuangshan Campus (hereinafter referred to as School B), Haining Boyuan School (hereinafter referred to as School C) were determined as the research objects. These three schools are special. They all belong to the schools for children of new residents. These schools mainly provide schooling services for the children of migrant workers. School A and School B are located in the suburbs, and School C is located in the urban area (Figure 1).

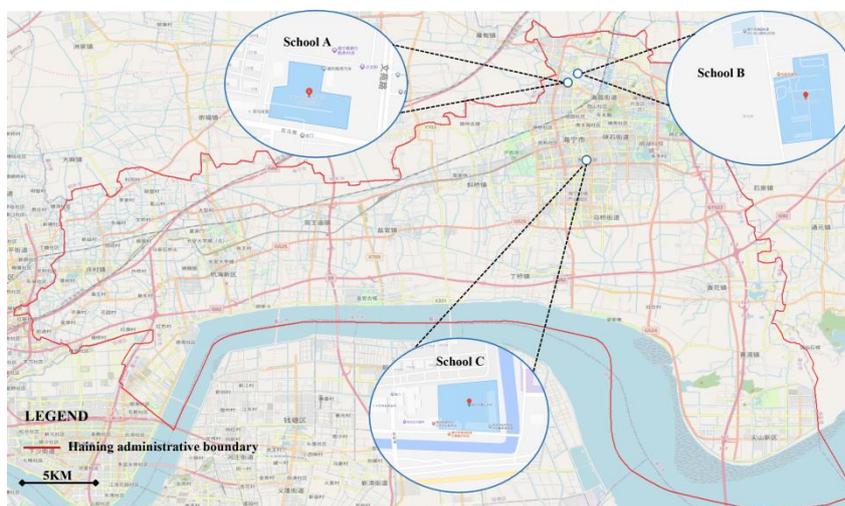


Fig. 1 Location of three schools

In April 2023, the author conducted a squatting point survey at the entrance of these three schools during the period of going to and from school, and each school conducted a survey for 2 days. In the process of investigation, on the one hand, the proportion of independent school children was observed. On the other hand, semi-structured interviews were conducted with parents who came to the school by random sampling, and follow-up surveys were conducted after permission.

3. Results and Discussion

3.1 Research school information

A school has 25 classes, and students from grade 1 to grade 3 are currently studying here, with a total of more than 1,000 students ; school B has 33 classes. At present, students from grade four to grade nine are studying here, with a total of more than 1300 students. C School is a nine-year school with 36 classes and more than 1,300 students (Table 1). School A and School B are located in the suburbs, and School C is located in the urban area. The three schools are geographically close to the nearby industrial area.

Table 1. Schools for New Residents ' Children in Haining

For short	School name	Student grade	School scale	Position
-----------	-------------	---------------	--------------	----------

A school	Boda Torch Campus	Lower grades of primary school (grades 1-3)	25 classes, a total of more than 1000 students	Suburb
B school	Boda Shuangshan Campus	Primary school higher grades (4-6 grades) + junior high school three grades	33 classes, a total of more than 1300 students	Suburb
C school	Boyuan School	'Primary school + junior high school ', a total of nine grades	36 classes, a total of more than 1,300 students	Urban district

3.2 Path analysis

In the survey of A school, we obtained 14 descriptive trajectories through interviews, and 8 trajectories through actual follow-up surveys. A total of 22 general school trajectories were obtained (Note: Because some of the residential points in the trajectory are similar, the trajectories are similar, so they are merged, and 14 different trajectories are presented on the left side of Figure 2). In the process of sorting out the trajectory, the descriptive trajectory is calculated by GIS software, and the shortest distance from the school to the residential point is calculated. The average distance of these 22 trajectories is 4.10 km, and the standard deviation is 2.08.

Because A school is located in the suburbs, there are fewer public primary schools around. In the actual random survey, it was found that many students in the school lived far away from the school, and the data showed that 77.3 % of the students lived more than 1km away from A school, and the distance from the public school was less than or equal to A school. 1km from the 15-minute living circle) There are public schools near the home, but they can only be forced to choose new residents ' children 's schools farther away because they cannot meet the admission requirements.

In the survey of school B, we obtained 13 descriptive trajectories through interviews, 8 trajectories through actual follow-up surveys, and a total of 21 trajectories were obtained (Note: similar trajectories are merged as above, and 15 different trajectories are presented in the middle of Figure 2). Similarly, the descriptive trajectory is calculated by GIS software to calculate the shortest distance from the school to the residential point. The average distance of these 21 trajectories is 3.57 km, and the standard deviation is 2.32.

Because school B and school A are both located in the suburbs, there are fewer public primary schools around. Similarly, in the actual random survey, it was found that many students in the school lived far away from the school, and the data showed that 62.0 % of the students (Note : this part of the students lived more than 1km from school B, and the distance from the public school is less than or equal to school B) There are public schools near the home, but because they cannot meet the admission requirements, they can only be forced to choose a new resident children 's school far away. The three schools are geographically close to the nearby industrial parks.

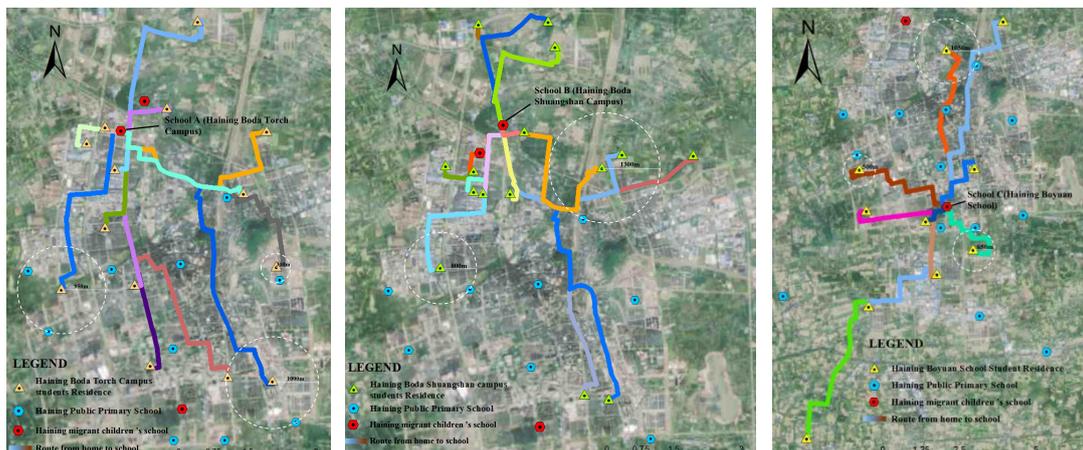


Fig. 2 The path from home to school (The left is A school, the middle is B, the right is C)

In the survey of C school, we obtained 10 descriptive trajectories through interviews, 8 trajectories through actual follow-up surveys, and a total of 18 trajectories were obtained (Note: similar trajectories are merged as above, and 10 different trajectories are presented on the right side of Figure 2). Similarly, the descriptive trajectory is calculated by GIS software to calculate the shortest distance from the school to the residential point. The average distance of these 18 trajectories is 3.78 km, and the standard deviation is 2.51.

Because C school is in the urban area, there are many public primary schools around. However, in the actual random survey, it is found that many students in this school live far away from the school. The data show that 88.9 % of the students (Note: this part of the students' lives more than 1km away from C school, and the distance from the public school is less than or equal to C school) have public schools near their homes, but they can only be forced to choose new residents' children's schools far away from the entrance requirements.

3.3 Common issues

Through the school access path of the three schools, it can be found that due to the problem of "difficult enrollment," many migrant children cannot enter public schools that are closer to the place of residence and have better educational resources and can only be forced to "abandoning the near and seek the far" to choose new residents' children's schools farther away from home. More than 50 % of the parents surveyed said that the points enrollment system in nearby public schools was too difficult. In terms of the length of the school-to-school path, the average school-to-school distance of the three schools is far more than the distance of 1km (15-minute life circle) specified in the 'Zhejiang Province Beautiful Town Life Circle Configuration Guide (Trial)' (Fig.3). This shows that the institutional factors do have restrictions on migrant children and need to be improved.

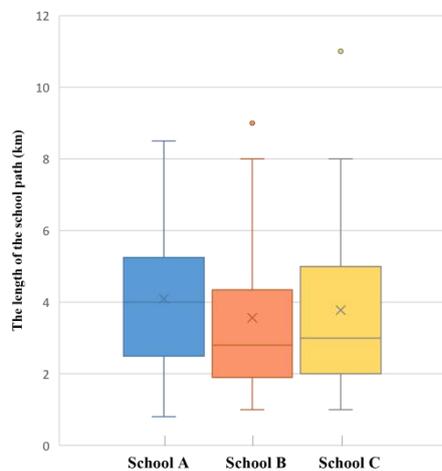


Fig. 3 The length of the school path of the three schools

Due to the existence of the phenomenon of "abandoning the near and seeking the far," we also found that children's independence is very weak in the investigation of the general school situation. Among all the statistics of the three schools, only three parents said that they occasionally let their children go home alone, but they would still send them to school. The residence of these three parents and children is less than or equal to 2km from the school. At the same time, the risk of the school path will increase with the increase of distance. In all paths less than or equal to 2km, only three paths cross the high-grade highway. With the increase of distance, there will be an increase in the number of crossing the high-grade highway or a small number of crossings but nearly half of the paths are on the high-grade highway. Not only through the high-grade highway, but the school path

is also dangerous in the part of the non-high-grade highway (Fig.4), such as the lack of walking aisle.



Fig. 4 The main road of B school gate

In addition to affecting children's independent mobility, complex traffic conditions will also lead to children's lives becoming a patchwork of fragmented spaces. Schools and places of residence lack the connection of walking space, which in turn reduces children's access to 'independent action'. Children cannot 'travel independently', which makes parents have to pick up their children, increasing the time cost for parents to take care of their children. During the interview, we learned that 8 parents (13.1%) said they were fully acceptable to pick up their children and would not affect their daily life. Among them, 7 of them had a school path of less than or equal to 2km. There were 28 parents (45.9%) who said they needed to pick up their children, but it would have an impact on daily life. Among them, 26 of them had a school path greater than or equal to 2km. 18 parents (29.5%) said that they need to pick up their children, but it will have a greater impact on their daily life, hoping to reduce this part of time. Among them, 16 of them have a school path greater than or equal to 5km. Other parents said it had no effect. From these cases, it can be found that picking up children occupies part of the time of these parents. With the increase of distance, the time of picking up children also increases, which is equivalent to the time cost of parents taking care of their children.

3.4 Log tracking report of migrant children

In this section, this study chooses to analyze the independence of the school day of migrant children A with more common characteristics. It is found that children do not need parents to intervene when they are only at school, and the transfer of children occupies part of the parents' time, which also leads to the need for parents to accompany some of the children's after-school activities. In order to further explore the relationship between the time allocation of migrant workers and the existence of childcare, a comparative analysis of the time allocation between parents and children was established through the data collection of semi-structured interviews (Fig.5). Through comparative analysis, it is found that the ratio of mother's leisure and entertainment time to childcare time is 130min: 120min, nearly 1: 1; the ratio of father's leisure time to childcare time is 110min: 205min, which is nearly 1: 2 value. It is not difficult to see that parents spend a lot of time on taking care of their children, and even can greatly exceed their own entertainment time, which in fact greatly reduces the happiness of parents' life. Parents have little time to learn to improve themselves, and there are only a few entertainments time left, and they must accompany their children on holidays.

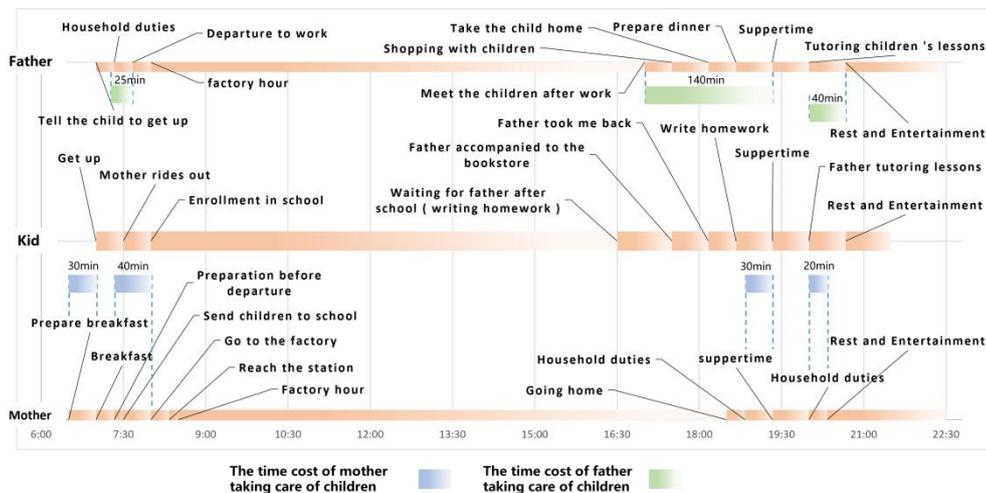


Fig. 5 Based on 12 interviews, the typical working day time and event distribution map was obtained.

4. Conclusion

Under the premise of policy and other institutional factors, there are few discussions on the impact of non-institutional factors such as urban and school environment on migration, and there is a lack of consideration of migrant families as the main body. Therefore, this study takes Haining City, which has more migrant workers, as an example. Through interviews, policy research, and follow-up surveys, it explores the impact of schooling on migrant workers and their children, and whether it will affect their willingness to migrate. The research shows that: first, the non-independent schooling activities of migrant children do increase the parenting cost of parents, mainly the time cost. Second, the non-independent school activities of migrant children will reduce the willingness of parents to migrate to a certain extent, but it is not the main factor. Thirdly, if the children of the migrant workers can carry out the school activities independently, it will increase the willingness of the parents to move.

From the perspective of urban spatial planning, whether children can travel independently and safely between houses, parks and schools is an important indicator to test ' children's independent mobility '. But from the current situation, few cities can achieve this indicator. Most cities place the right to a car above the right of way for children, resulting in children being unable to go out freely. This is even worse for the children of the migrant workers. In the current situation of ' abandoning the near and seeking the far ', parents will be forced to pick up their children to and from school. With the increase of the school path, the cost of care for children by these migrant workers has been increased invisibly. Under the joint action of institutional and non-institutional aspects, the current situation has been formed.

Institutional factors are important, but non-institutional factors such as children 's care costs, children 's education, public service facilities rationing, etc., the impact of migrant workers ' willingness to move with their children cannot be ignored. Among the non-institutional factors, the time cost of caring for migrant children is related to whether the distribution of educational facilities is close to the place of residence of migrant workers, and the walking optimization of the school path. Reducing the time cost of caring for migrant children can be positively supported by configuring schools near industrial parks where migrant children are concentrated, and by building public service facilities that are conducive to ' independent travel '. These are all feasible paths that can be used to promote the education equity of migrant children from the perspective of architecture.

At present, the Chinese government encourages the provision of low-cost and high-quality housing for migrant workers near industrial parks in the construction of affordable housing. This

study calls for the construction of child-friendly schools, school access and small open space in the same area. In the previous industrial park design guidelines, only production was considered, without considering the education and living space of workers' children, which needed to be changed. Through these ways to alleviate the problem of migrant children's "difficult enrollment," while increasing their possibility of going to and from school independently, thereby reducing the cost of parents' care for their children and increasing the possibility of migration.

Acknowledgements

Fund program: National Natural Science Foundation of China (51878612) Study on Morphological Transformation of Zhejiang Central Towns and Spatial Structure Optimization Method.

References

- [1] Hu Xueping, Kang Yuanzhi. Analysis of family migration and urban settlement intention of floating population. *Statistics and decision-making*. 2021,37(19):76-79.
- [2] Li Jingmei, Wu Zhihui. Whether to migrate or stay behind: a study on the basic situation and influencing factors of migrant workers carrying their children into the city. *Southern Population*, 2017,32 (04) : 56-67.
- [3] Zhang Qichun, Luo Wenfang. Research on the influencing factors of children's migration decision of agricultural transfer population-Based on the analysis of the dynamic monitoring data of agricultural transfer population in Beibu Gulf urban agglomeration in 2016. *Journal of Xiangtan University (Philosophy and Social Sciences Edition)*, 2020,44 (4): 53-60.
- [4] Wang Luozhong, Xu Jingjie, Yan Qianqian. Research on the schooling policy of migrant children in the compulsory education stage-Analysis of policy texts based on 18 cities. *Learning and Exploration*, 2020 (03): 23-31 + 174.
- [5] Zhou, S., & Liang, J. Migrant workers and environmental amenities and infrastructure in urban China: from the lens of environmental justice. *Journal of Environmental Policy & Planning*, 2021, 23(6), 781–795.
- [6] Huang, X., & Chen, M. Understanding the role of housing in rural migrants' intention to settle in cities: Evidence from China. *Habitat International*, 2022.
- [7] Yu Xinsheng, Liu Yang. Research on the difference between the decision-making of the children of the new generation of migrant workers and the decision-making of the left-behind. *Journal of Huzhou Vocational and Technical College*, 2020, 18 (2): 69-73, 80.
- [8] Liao, L., & Wang, C. Urban amenity and settlement intentions of rural–urban migrants in China. *PLoS ONE*, 2019, 14.
- [9] Wales M, Mrtensson F, Jansson M. 'You can be outside a lot': independent mobility and agency among children in a suburban community in Sweden. *Children s Geographies*, 2020(1):1-13.
- [10] Karen Witten, Robin Kearns, Penelope Carroll, Lanuola Asiasiga & Nicola Tava'e New Zealand parents' understandings of the intergenerational decline in children's independent outdoor play and active travel, *Children's Geographies*, 2013, 11:2, 215-229.
- [11] Johansson M, Mårtensson F, Jansson M, Sternudd C. Urban space for children on the move. In Friman M, Olsson LE, Waygood O, Mitra R, editors, *Transport and Children's Wellbeing*. Elsevier. 2020. 217-235.
- [12] Hashim H, Hashim S F, Shuib K B. CHILD FRIENDLY URBAN NEIGHBORHOOD IN PUTRAJAYA, MALAYSIA. 2019.
- [13] Xu, Z & Dai, X. Decision-making factors for migrate as a family: a case study in Haining City. *Proceedings of the 15th International Conference on Environment-behavior studies*, 2022, 114-115.
- [14] Wang Yuanxin. The application of interview method in language field investigation practice. *Ethnic education research*, 2021,32 (06): 58-65.