International review for spatial planning and sustainable development, Vol.4 No.1 (2016), 31-48
ISSN: 2187-3666 (online)
DOI: http://dx.doi.org/10.14246/irspsd.4.1_31

"Attending Nearby Schools" in Central Beijing: Influencing Factors and the Policy Distortion

Bo Bi[1*], Xiaoling Zhang[2]
1 School of Architecture, Tsinghua University
2 Department of Public Policy, City University of Hong Kong
** Corresponding Author, Email: bb12@mails.tsinghua.edu.cn*
Received 14 May, 2015; Accepted 24 August, 2015

Key words: Attending Nearby Schools, Parental Choice, Enrolment Policy, School District, *de jure* Catchment Area, *hukou*, Basic Education, China

Abstract: Whether the principle of 'attending nearby schools' is an obligation or an option makes a big difference in promoting education equity. This paper explores how the setting up of a *de jure* catchment area together with other complex socio-economic factors in China's context distorted the initiative intention of 'attending nearby schools', via a case study of Xicheng District in central Beijing where quality public schools are concentrated and their catchment areas were accurately divided. With the unbalanced distribution of basic education resources formed by history, the remaining controversial *hukou* system, and the rapid urban and social transformations increasing parental choice, a contradiction exists within the Chinese public school enrolment system where the admission right is directly bound up with residential registration (*hukou*): an emphasis of equal access to basic education, but an opposite outcome. In order to reveal the causes and effects of the 'attending nearby schools' policy in practice, the paper illustrates the spatial pattern of *de jure* school catchment areas by GIS-based mapping, explores the relationship in demographics classified by *hukou* status between the schools and catchments and collected representative opinions among residents on the policy implementation through semi-structured in-depth interviews. By explaining the disparity between school composition and the residential pattern of typical catchments with the choice behaviours of non-native/native groups, the paper discusses the legitimacy underlying the current enrolment system and makes suggestions for future reform.

1. INTRODUCTION

The fundamental relationship between basic education and location lies in the fact that children usually attend schools near their homes (Ingram and Kenyon, 2014). Parents would prefer to send their children to nearby public schools if there is no other priority than distance, making it a natural right of them (Li, 2007). While considering the objective differences in school quality and the rising diverse parental choice (Tsang, 2001), the moving costs for either relocating or long-distance commuting occur inescapably if parents intend to get access to any 'best school' instead of the one near home, which is a tough situation for planning policies aimed at minimizing the travelling distance to school.

Reducing inequality in the distribution of quality education resources across regions and groups sounds a plan satisfying both the convenience of schooling nearby and the desire for high quality education. But it is not easy

to set the evaluation criteria during the process of reaching that ideal state in practical policy making. Although assuring equal access to basic education is hammered repeatedly as a general principle in public education systems of most countries, not all sides of the goal can be guaranteed simultaneously and there have been two distinct ways practiced and discussed in certain contexts.

One way is to assign pupils mandatorily in the form of school district or school attendance zones, under the legal privilege of 'attending nearby schools', which is adopted in the mainland of P. R. China (China) as a typical example (Li, 2007). In China, "attending nearby schools" solely accounts for the legitimacy of a school district system in the sense of education equity and thus becomes an obligation (Zhu, 2001). According to the *Law of Compulsory Education* enacted in 1986 and revised in 2006 in P. R. China, the governments at all levels should ensure the right of 'attending nearby schools' for national school-age children. However, with the current *hukou* system (the registered residence system) fixing public welfare with registered residence locations, such a term is said to be defective in that a child may have no access if he or she is not available for attending a public primary school near the registered home, as is seen in the cases of migrant children (Yang, 2006).The other way is to allow or support school choice in education policy which turns attending nearby schools into an option for parents, just partly considering the distance between school and home, as in the case of England and Wales (Hamnett and Butler, 2013). In other developed countries such as the US, despite having a typical structure of school districts, it is also experiencing an overall trend to develop diverse alternatives for school choice (Ingram and Kenyon, 2014). However, 'choice' is intricately bound up with resources in the form of financial, locational and cultural capital, which are unevenly distributed across the population (Reay, 2012). The main western countries have evidenced many practices undermining equity related to school choice such as 'choice by mortgage' (Taylor, 2007), 'white flight' or 'catchment evasion' (Noreisch, 2007), as well as the increasing distance to travel to school by individual motorized means (Easton and Ferrari, 2015).

The challenge of finding the appropriate balance of increasing equity and bolstering choice is always quite difficult for public sectors. In tackling this challenge, it does make a difference whether "attending nearby schools" is an obligation or an option in light of the inevitable parental choice. To contribute to the socio-spatial outcomes of the principle for international comparative studies, it is necessary to reflect on the foundation and operation of the school district system in China. Given the dilemma worldwide, we question its implications in the name of 'nearby enrolment', 'improving equality' or 'forbidding school choice', to see if it makes sense in achieving these ideals by implementing a mandatory policy. In addition, we also assume that similar problems could even be worsened by the uneven distribution of education resources and their institutional legacies in a transition period characterized by rapid urban development. The central metropolitan areas, such as Beijing, are typical cases. The situation there remains to excavate where the factors above combined with the strict catchment-area-based enrolment system bring socio-spatial inequalities in primary education. The system, in an opaque environment, may exactly lead to the failure of attending nearby schools, which can tell us that the factual access is not just homogeneous or equal across urban areas and social groups, whereas its role with the influencing factors behind distorting the principle deserves more concern.

Against a background of very little previous work on the socio-spatial presentation of the school district system in China, this paper seeks to address a number of important issues with specific quantitative and qualitative methods combined, via the case study of Xicheng District in Beijing, the national education highland. The principal questions to be examined are: the extent to which pupils attend schools came from outside their home catchment in the study area; the typical reasons for the preferences of groups with different *hukou* status; the systematic factors influencing the achievement of equal access to basic education and the consequent distortion of the school district system on attending nearby schools. The structure of this article is as follows: in Section 2 the relevant contexts on the challenges of basic education inequalities in Beijing are reviewed, in companion with empirical evidences. In Section 3 the research framework, the data and methods mapping *de jure* catchment areas of primary schools and that identifying and investigating problem spots in the case study area are presented. Section 4 gives the results, the inferences and the analytical reflections from interviewers. Section 5 discusses the influencing factors from three aspects and the policy distortion on attending nearby schools.

2. RESEARCH BACKGROUND

2.1 The Beijing Context

2.1.1 Uneven distribution of education resources

Due to the huge influx of immigrants of marriageable age and the expected baby boom in recent years (BICP, 2011), Beijing is experiencing unprecedented challenges in providing sufficient and equal basic educational services. Despite that, there have been declines in the total number of compulsory schools, which manifest the scale effects in running schools (Zhang, 2011). On the other hand, just like the situation of most Chinese cities (Wu, 2013), quality public schools in Beijing are historically concentrated in central areas while residential sprawl continues. In central districts the density of primary schools was 2.4 per square kilometre and the proximity was 694 metres on average, while the figures for suburban districts were 0.33 per square kilometre and 1871 metres (Huang, 2006). More and more pupils attend the 'best' school, not their nearest school by means of moving costs such as spending on housing relocation or long-distance commuting. The competition for public school places of good quality thus keeps intensifying nowadays, particularly in central districts where the gross educational capacity was overburdened with a highest load rate reaching 133%, while the lowest load rate was only 74% for the districts mainly outputting pupils (BICP, 2011).

2.1.2 Evidences of inevitable parental choice

Following society's progress, Chinese parents tend to select schools with a fine reputation and high teaching quality (Tsang, 2001), whereas the distance between school and home and policy-related costs seem to be playing second fiddle. The local market for owner-occupied housing has a key role in indicating this. Variations in school quality are usually

capitalized into housing prices and parents use the housing market as a way of competing for school places (Cheshire and Sheppard, 2004). It is also true for Beijing. The housing price in the *de jure* catchment area of a key primary school in Beijing is notoriously sky-high. In 2011, the premium of a key primary school district room in the Beijing property market was about 8.1%, which reached the equilibrium level of chosen school fees on average (Zheng, et al., 2012).The other sign is the excess commuting to school which contributes to traffic congestion, environmental pollution and even potential problems for public health. Researchers recently found that the traffic congestion degree on school holidays was lower than that on school days by about 20% to 30% in Beijing (Zheng, et al., 2014). Beyond such evidences, social investigations directly show that parental choice is inevitable. According to the public opinion poll on urban-rural planning implementation in Beijing (2013), 37.4% of households said that they would rather take a long-distance trip to attend a high-quality school (BICP, 2013).

2.1.3 Enrolment policy of public primary schools

Under such circumstances, quality public primary schools in competitive districts have made it clear to give priorities to the students with a *hukou* and even a housing property in a designated catchment area, a so-called *school neighbourhood* (Lai, et al., 2009) or *de jure catchment area* which is distinguished from the *school district* as the specified lawful spatial range for enrolment, while *school district* is not directly involved in enrolment. The school catchment-school district system in China is a two-tier discourse when referring to the service area of public schools. Since primary public school enrolment is a sensitive issue, only the official enrolment guides of each primary school are available to the public and the format of text addresses on them indicating its *de jure* catchment area has not been processed in any type of open maps at the time of writing. It is a vague concept in terms of spatial cognition. In contrast, the spatial boundaries of school districts in this sense are transparent and commonly overlapped with that of sub-districts (*Jiedao*), given its positive role in policy promotion. The term of *school district* used in basic education planning or other macro policy documents refers to a management unit for organizing educational resources by Districts/Counties, or a cluster containing several schools with cooperative relationships (BMCE, 2014).

In official terms, a *de jure* catchment area of a single or joint compulsory school is subdivided by the Education Commissions of Districts or Counties on the basis of school size, local school-age population, surrounding traffic conditions and administrative requirements etc., in order to keep a local supply-demand balance in basic education (Xian, et al., 2014). However, considering the huge spatial inequality on the whole, such form that serves to allocate school places to a rigidly designated area has been caught in a policy dilemma for certain. Only a school-age child with a *hukou* located in one *de jure* catchment area has the admission right of the corresponding school (Zou, 2012).Then children with non-native *hukou* could be reasonably put on the back burner in local decision-making as a result. They enter a public primary school only by providing an actual proof of residence or parents' residence permit to prove the legitimacy of actual residence, which is a disguised alternative requiring housing purchase in the designated area (Hu, et al., 2014). We can therefore see that the socio-spatial structure especially classified by *hukou* status in schools and the corresponding catchments

reflects both the direct projection of admission right relations and the underlying inequality in basic educational service.

2.2 The Case Study Area

The research sets Xicheng District, the education highland and the old city in central Beijing, as a typical case to explain the mechanism in education resources allocation. Xicheng District spans 50.7square kilometres and has 1,240,000 inhabitants (2010 National Census) which is subdivided into 15 sub-districts and 255 communities. There were 72 public primary schools (81 sites in total including 9 sub-sites) with 53,000 pupils in 2011 (BICP, 2011). Most of the schools enjoy a time-honoured history and the formerly key primary schools occupied 28% of the total (BICP, 2011). The district takes a lead in basic education with abundant quality educational resources formed by history. In contrast to the decent capability of basic educational services, the aggregate amount of residential space was relatively short, since the catchments of primary schools were strictly specified all along and the second-hand housing market there with the selling point of 'school district room' was in great demand.

According to the information from the officials of the Xicheng Education Committee, the division of *de jure* catchment areas has not changed much since the 1980s, and the number of registered native residents in the old city has not changed much in recent years based on previous census data. In old cities with quality public schools, *de jure* catchment areas were often accurately divided and in some cases only several buildings of a community are marked off (Yang, 2013). There might be a potential implication of regulating educational demands by fixedly defining them due to the co-construction or partner connections left there which could bring extra student sources from outside the *de jure* catchment areas. Although large-scale relocation from the old city of Beijing during past years has caused massive actual separation of residents from household registration, the original connection between local public service and the indigenous is almost always maintained for stability, regardless of the actual distance. Meanwhile the education demands from outside the district as well as that from the new immigrants within the district were considerable. So the mismatch related to the school catchment system tends to be more typical in Xicheng than in other peripheral areas of Beijing.

3. RESEARCH DESIGN

3.1 Research framework

It is assumed that the most important role of defining *de jure* catchment areas was to regulate basic education demand by enhancing the costs of school choice and excluding foreign populations under the specific context above, which distorted the initiative intention of attending nearby schools. To verify this basic role, the first step is to reveal the distribution of admission rights by mapping the boundary, layout and pattern of *de jure* catchment areas on a fine scale. The second step is to recognize outliers or problem spots by exploring the mismatch between school size (classified by *hukou* status: native and non-native) and the nominal enrolment size (registered native school-age population) as well as the non-native school-

age population in the *de jure* catchment areas respectively. Then the research will reflect the comprehensive factors influencing attending nearby schools through identifying the common reasons for non-native/native groups' choices. The policy distortions of the school district system on it will also be displayed by contrasting the outcomes with original principles.

The framework diagram (*Figure 1*) shows the process to conduct this research. On the basis of the brief introduction to the status quo and the enrolment policy above, primary schools catchment areas within Xicheng District are mapped, then the mismatch analysis between the actual school size and school-age population derived from national census data in each catchment area is presented. The next part is the in-depth interview of non-native/native groups with reflections from them and the authors in an attempt to discriminate the factors influencing 'attending nearby schools'.

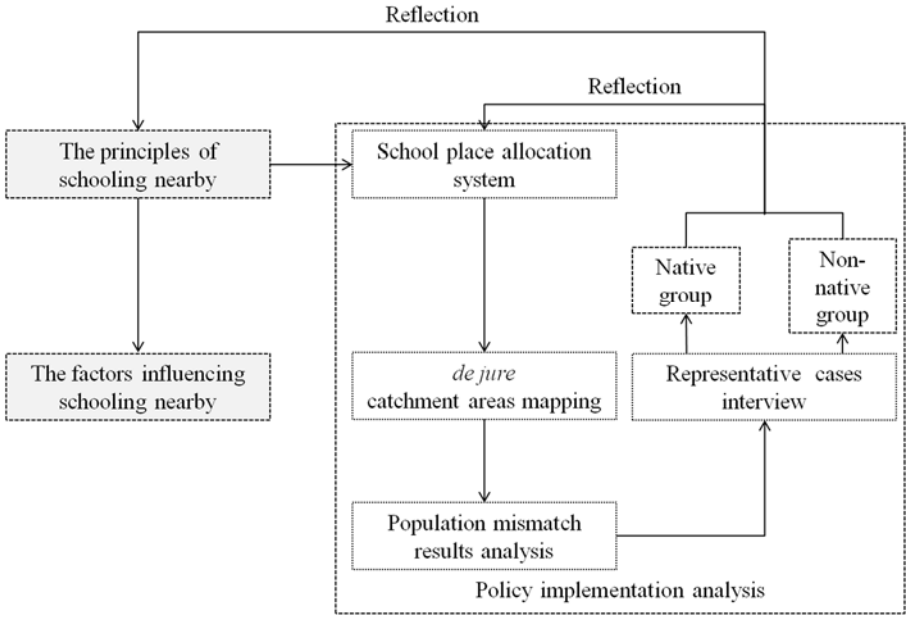

Figure 1. The framework to conduct the research on policy effects on 'schooling nearby'

3.2 Research methods

3.2.1 Measurement issues and data sources

The latest official enrolment guides indicating enrolment targets of 72 primary schools in Xicheng District in 2014 were gathered to draw the text addresses of residential buildings and compounds in each *de jure* catchment area. The raw data of *de jure* catchment areas in text format were matched with the aid of a fine-scale GIS database from a government source. The school size classified by *hukou* status of each primary school in Xicheng, as the indicator of service capability, comes from the Special Plan of Basic Educational Facilities in Beijing Municipality (2011).To reflect the detailed distribution of school-age (age 7-12) population and their *hukou* status as education demands, data from the 2010 National Census in Xicheng District on community-level accuracy were collected.

However, the raw data indicating the age property of population in each community had been synthesized into sub-district level, so there was a lack of accurate data of the school-age population at a community level. Due to the hypothesis that there was a similar age structure in one sub-district as in

its communities, the school-age populations were seen to be uniformly distributed in each community and each group (non-native/native) within one sub-district in this paper (*Table1*). The proportions were also adopted for the registered native population outside Xicheng as the floor levels counting the nominal enrolment size, since it is normatively estimated that school-age population (age 7-12) in the stage of basic education represents 3.6% of the total number of residents according to the Residential Public Service Facilities Planning and Design Standard of Beijing Municipality which is higher than all the proportions (*Table1*).The number of 'back schooling' natives thus would be underestimated but rectified in further analysis.

*Table 1.*Raw data indicating school age proportion and *hukou* status in 2010 Xicheng Census at sub-district level

sub-district	Resident population	Resident school-age population	School-age population proportion	Registered native population*	Non-native population**	Subordinate communities
Xichanganjie	51477	1508	2.93%	72874	19565	13
Xinjiekou	95497	2998	3.14%	103702	31085	21
Yuetan	116543	3685	3.16%	145094	29731	26
Zhanlanlu	130925	3577	2.73%	135954	40012	21
Desheng	116768	4104	3.51%	115259	28963	23
Jinrongjie	67888	2061	3.04%	109355	18085	19
Shichahai	95433	3039	3.18%	119437	32048	25
Dashilan	36997	940	2.54%	54873	13473	9
Tianqiao	46385	1201	2.59%	51799	13510	8
Chunshu	30547	812	2.66%	37047	8722	7
Taoranting	43455	1143	2.63%	54816	11238	8
Guanganmennei	73692	2043	2.77%	84808	17242	18
Niujie	51877	1202	2.32%	49405	12634	10
Baizhifang	95737	2463	2.57%	90277	22170	18
Guanganmenwai	179536	4384	2.44%	106666	58294	29
Total	1232757	35160	2.85%	1331366	356772	255

*It contains the numbers of both non-resident natives and resident natives which together will be compared to the amount of native pupils in primary schools as the nominal enrolment pool.
**It refers to the residents with *hukou* outside Xicheng but reside in Xicheng actually more than half a year and the number will be compared to the amount of non-native pupils in primary schools after the discount.

3.2.2 GIS-based mapping and mismatch analysis

Considering the situation of joint recruitment between several schools and branches, the catchment areas of such schools were consolidated and the total number of *de jure* catchment area was 65 as a result. 87.2% of the addresses in the official enrolment guides had their counterparts in the database through inquiry and the modification of non-standard addresses. Several special addresses were acquired through artificial interpretation. Areas of water, parks, business districts, protected cultural relics and sites that could not generate basic education demand were not delimited into them.

Each catchment area contained a certain number of school-age children (non-native/native) converted from the community-level census data. For the situation that the minimum population statistics unit, i.e., the community, was divided into different catchment areas, the number of population were assigned based on the area proportion of the delimited area to the whole of

the catchment area. The figures of the total school-age population and the constituent parts of non-native/native groups were matched with the corresponding parts in school size respectively (*Figure 2*). The mismatch termed here thus refers to the difference between the number of pupils attending a school and the number of school-aged residents in its catchment area. Each of them was classified according to their *hukou* status. The mismatch analyses were carried out not only to test their relationship but also to recognize overloaded schools and socio-polarized cases for interviews. Given the fact that not all native children actually lived within the catchment areas and not all non-native children actually enrolled in the corresponding school of the catchment areas they lived, the mismatch here calculated in quantity is an underestimation of the factual mismatching situation.

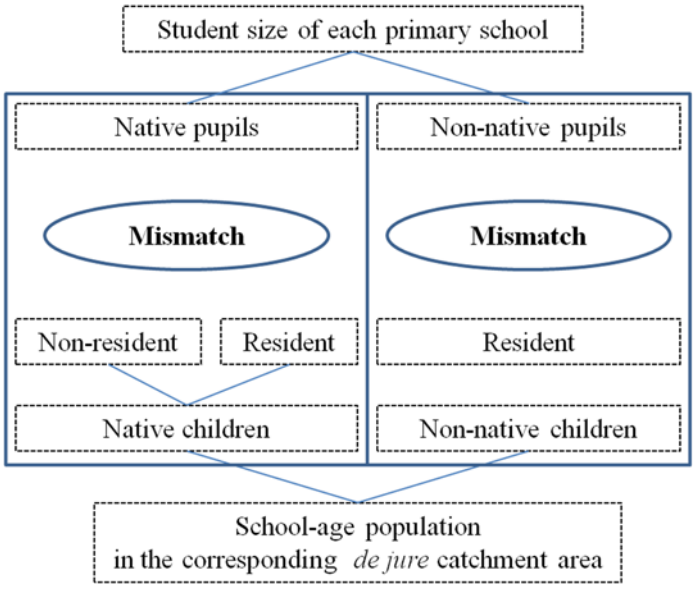

Figure 2. The objects of the mismatch analysis

3.2.3 Outlier recognition and in-depth interview

Bridging the gap between quantitative and qualitative research is necessary in order to understand the context within which the data have been collected and to understand the system that underpins the data (Gorard and Smith, 2004). The research drew on a variety of sources, including the records of 12 semi-structured interviews with parents from specified schools and from their catchment areas, as well as a number of interviews with other key bodies, including local politicians and school administrators. The interview samples were proportionally selected from the three most popular schools and the three most unpopular schools within their catchments in March 2015 (occasionally the most popular schools have the highest proportion of native pupils and the most unpopular schools have the relative highest proportion of non-native pupils). The main questions include 1) How far do you live from the school? ; 2) Does your child have a native *hukou*? ; 3) How did your child get admitted by the school? ; 4) What is your opinion on the current enrolment policy based on *de jure* catchment areas? Ultimately, even the most objective data will require the most subjective insight (Phillips and Plessis, 2003).The final results were balanced with the opinions from native and non-native parents as well as the present

representative ones to help explain the underlying reasons. Although the materials are only briefly analysed in this paper, they have been used to inform much of what is being said.

4. RESULTS ANALYSIS

4.1 Inferences from mapping catchment areas

The map shows that the 65 *de jure* catchment areas in Xicheng District were subdivided mostly based on the boundaries of communities (*Figure 3*). The rigid shapes and sizes thus made the planning principle of service radius fail. The irregular form shave some features specifically verifying some problems in dividing *de jure* catchment areas as follows.

1) They were divided rigidly so that buildings within one block may be assigned to different catchment areas. In one case the boundary was even jagged regardless of the arterial road beyond (Sample 1 in *Figure 4*). They were divided not just for the convenience of daily commuting to schools.

2) A *de jure* catchment area may have a considerable part overlapped with another, which means that an address was the counterpart recruitment target for two schools (Sample 2 in *Figure 4*). That potentially caused a waste of resources due to the lack of coordination between schools.

3) The best school with the largest number of current students at school, together with its branches had a relatively minimum *de jure* catchment area (Sample 3 in *Figure 4*), which apparently had their nominal enrolment targets mismatched with the factual.

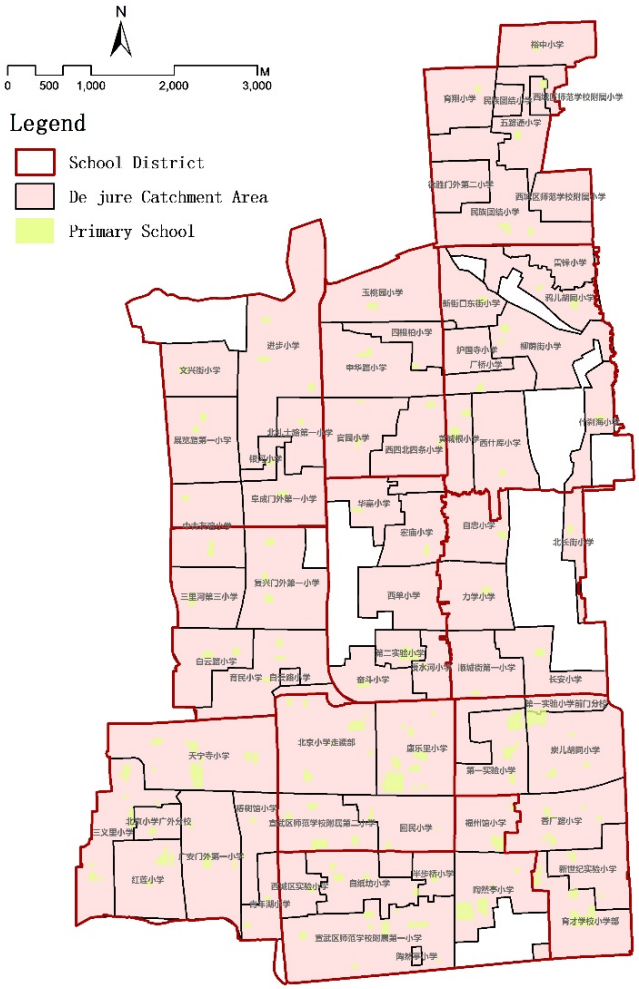

Figure 3. The subdivision of *de jure* catchment areas in Xicheng District

Further evidences also show that administrative factors prevailed in the division and complicated right relations could be identified.

1) A few primary schools had an independent part of their *de jure* catchment area spread in that of another school, i.e., an enclave (Sample 4 in *Figure 4*). It was an obvious spatial evidence for that it was the right relation, not the locational relation, connected the supply and demand sides.

2) There was also a situation that the addresses entitled with admission rights definitely pointed to the office buildings of a work unit, not just residential buildings. That means school places are specially assigned to the staff of the unit regardless of their actual residence.

3) It has been verified that some addresses in official enrolment guides did not refer to any places that still existed in reality. As a consequence of demolition in built-up areas and the renaming of some alleys, those addresses only represented the written household registration.

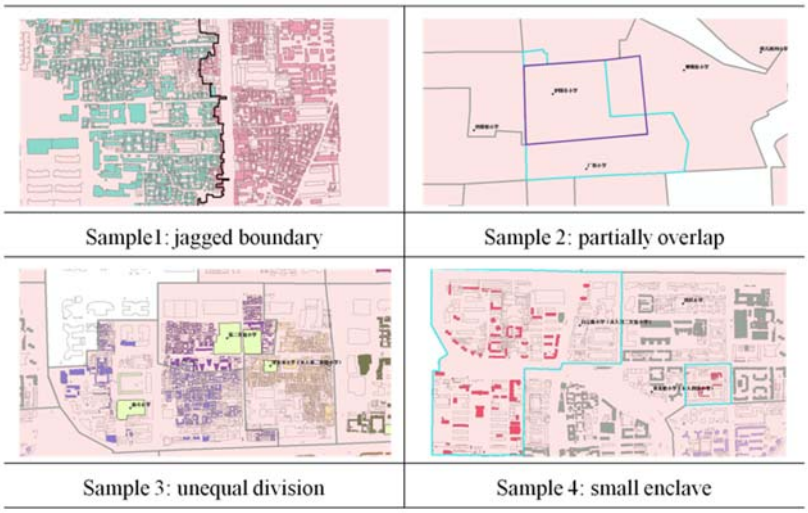

*Figure 4.*Special samples illustrating the rules of subdivision

4.2 Illustrating the mismatch results

From *Table 2*, the primary school size was overall close to the number of registered school-age residents (both native and non-native) within the whole District. 1/4 of the school capacity in Xicheng was shared by the non-native group and a small fraction of education demand of the native group had outflow, which may be caused by social transformation due to urban development. Meanwhile the total school-age population in each catchment area was approximately uncorrelated with the actual service capacity.

Moreover, the distribution of the school-age population across catchment areas was very uneven accompanied with an even larger variation in the school size. There was a potential polarized trend between schools as their intakes differentiated. In general, 41 schools could not meet the demand in its catchment area while the matching ratios of the six most overloaded schools being more than 100% (from 160.4% to 1164.5%). Even within Xicheng District which enjoyed an overall fine reputation of quality basic education service, the education inequality between schools was evident. Such overload rates were alarming indeed which means that only a small fraction of its students came from the surrounding areas with legitimate admission identity. These competitive schools had to satisfy the extra demand of school choice and the area around them may suffer from the problems of high housing prices and traffic congestion caused by drop-off and pickup during peak hours of school commuting.

*Table 2.*Matching results of primary school size and registered school-age population by *de jure* catchment areas

	Sum	Extremum	Mean	Median	StdDev
School Size	50140	3592 161	771	565	614
School-age Population*	49378	1894 187	760	670	398
Difference**	762	**3308** **-1176**	**12**	**-137**	**650**
Mismatching Ratio***	1.5%	1164.5% -79.2%	24.3%	-23.7%	164.8%
Difference of the Native	-2499	**3279** **-1192**	**-38**	**-163**	**639**
Mismatching Ratio of	-6.6%	1531.5%	13.1%	-39.5%	212.7%

the Native		-92.6%			
Difference of the Non-native	3261	437 -207	50	38	115
Mismatching Ratio of the Non-native	28.2%	535.2% -69.9%	67.2%	24.7%	124.4%

= registered native population (resident plus non-resident) and non-native population in each catchment area the specified proportion of school-age population in corresponding sub-district.
**= primary school size – registered school-age population.
***= (primary school size – registered school-age population) / registered school-age population.

We can also see that the standard deviation of difference in the native group was larger than the non-native group and the difference of the native group had more potential to explain the total mismatch result. The result of a crude correlation analysis demonstrated the disorder of enrolment at that time. There was a moderate positive correlation ($R=0.8164$, $P<0.001$) between the actual school size and the nominal enrolment size in *de jure* catchment areas (*Figure5*). The difference in the native group was increasing with the school popularity represented by school size while the difference in the non-native group had hardly a relation with school popularity. It can be inferred that the native group had a stronger capability to compete for popular school places than the non-native group and there was a sign that more non-native pupils were concentrated in less popular schools than native pupils. This finding supports the evidence of parental choice from the side. There definitely were informal admission channels beyond the regular admission process and it was very clear that primary schools with better attractions have retained more places for native pupils out of the *de jure* catchment area to choose.

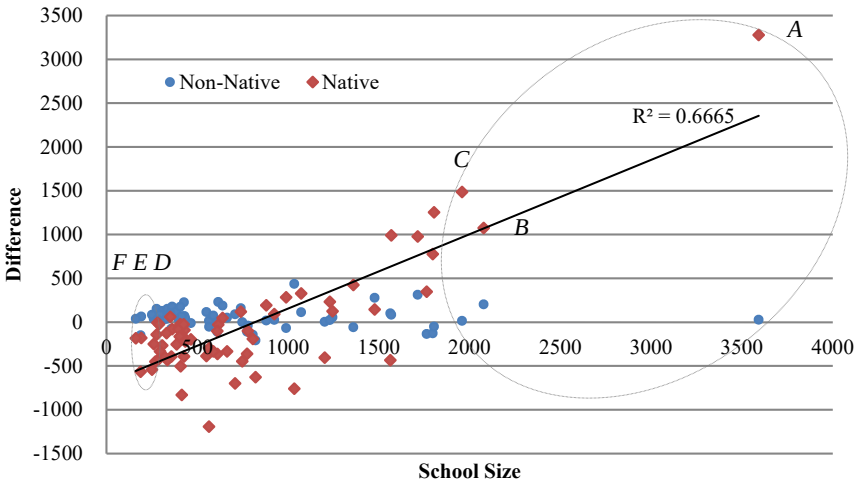

*Figure 5.*The variation of the difference of (non-)native pupils along with school size in *de jure* catchment areas and the representative cases specified for interview

The catchment area with the most popular primary school (School A) that is considered the outlier had an extremely high positive mismatch ratio in the native group. The other two representative cases (School B and C) followed and all the three most popular schools attracted a considerable amount of pupils, especially native pupils from the outside. There are potentially two kinds of circumstances. 1) There were many 'native' pupils outside the District whose parents worked for the units with a co-construction

relationship with a particular school while the *de jure* catchment area of those most popular schools were subdivided into too small units to regulate local resident demands. 2) Given that non-Xicheng but Beijing pupils were few in the native group and the situation where registered and actual residences were separated due to redevelopment projects in the past, the extra part could also be from those underestimated non-resident natives (see the measurement issues in 3.2.1) who had moved out of Xicheng but retained native *hukou*, or could have been caused by native pupils flowing across catchments within the District (the latter probability was small if catchments were accurately defined and well executed, or at least such a phenomenon was just isolated).

The bottom three unpopular schools (Schools D, E and F) in the graph were selected to be the other three typical cases that all had a high proportion of non-native pupils. The catchment area of School E was overlapped with key renovation areas in the old city and had experienced a massive outflow of local residents. Considering passive population decentralization, aging factors, quality reduction or other factors, there could be few natives coming back for schooling and such a school tended to be occupied by non-native pupils. Drastic redevelopment also brought similar situations to the other two catchment areas and there were few residential functions remaining in the current surroundings. The declining competitiveness of schools thus could be attributed to these negative exterior impacts besides the unknown interior ones.

4.3 Reflections on policy implementation

As in the case study of Xicheng District, there was a common consensus on that only a small fraction of pupils attending schools actually lived in corresponding catchment areas with legitimate identities, which was deemed as 'attending nearby schools'. Most pupils did not attend schools within home catchments according to a local administer. But the precise enrolment paths for different groups were very different. For the most 'powerful' natives and even a minority of non-natives in the interview, they actively choose the most attractive school and not necessarily lived in its catchment area.

More than 80% of the school intakes come from co-construction units of central and municipal level and are not regulated by regular admission process that is open to the public. Some of them may just have their hukou located in the catchment, but definitely most do not actually live there. The size of the de jure catchment area is too small and we all know the reason. The non-native pupils attending this school also have their connections. (An anonymous administrator in School A)

In the native group with advantaged conditions, the separation of residents from household registration also caused the capitalization of public welfare and potentially massive cross-district commuting.

Most old Xicheng residents relocated during the past years prefer to have their offspring return to the quality schools here. But I heard that it has become more difficult to retain Xicheng hukou for households moving out now if the housing unit is demolished. The best option for native relocatees is to keep your housing and rent out to immigrants but keep the hukou of that address for your children. But people coming to buy second-hand housing here are mostly for the sake of hukou. (A native parent in School B)

For native residents lacking the capability, locational bonus or opportunity to move out or choose a new location, some were facing the unpleasant invasion of non-native pupils and doubted the rationality of the school catchment system.

I'm not very satisfied with the division of school catchments and I don't know who has operated it. Even my residence is closer to a better school than the current counterpart but I have no right to choose it. The school now in my home catchment has gradually been occupied by migrant children. Several neighbours of mine are considering selling their houses because of this. I don't know if it is worthy, but not badly my child will graduate from it this year. (A native parent in School D)

Non-native parents, if qualified, would be satisfied by the availability of a school place regardless of the impacts of commuting distance or school segregation. They picked up the rest of the resources left by those natives during the integrated transformation.

We were fortunate to have been assigned to this time-honoured primary school as non-native families and most children here were like us. Although it is a little far from home, but we could accept any decisions of assignment then as long as a place was guaranteed. I guess there are hardly any pupils coming from the surrounding area since all these buildings have been renovated into offices and shops. (A non-native parent in School E)

But the ration scope for non-native groups was the whole District and the qualification was hard to attain. Apparently, most of them were out of the consideration of 'attending nearby schools'. Thus it could be argued that the inequality in access to schools was a result of unfair artificial treatment.

Hukou is a big problem. Although I have lived here for a long time, it seems that the catchments of primary schools have nothing to do with me. Even though I have passed and have the qualification to have my child rationed by the Education Committee, I know that the final admission will come from just a few schools fixed for us. (A non-native parent living in School C's de jure catchment area)

5. DISCUSSION

5.1 Influencing factors on equal access

'Powerful' natives, 'back schooling' natives and the non-natives who were not strictly regulated by the catchment system constitute the main groups not 'attending nearby schools' in terms of the policy definition. Some reasons why this happened are evident based on the contextual information and analysis results above. There are three dimensions of causative factors summarized as follows (*Figure 6*): 1) the uneven distribution of quality basic education resources on the whole;2) active or passive parental choice due to urban and social transformation and 3) the institutional inertia resulting in an unequal enrolment system which differentiated social groups by *hukou* status and various informal connections (*guanxi*). Some other institutional, social and cultural factors are also listed beside the dimensions. Although the enrolment system targeted at 'attending nearby schools' increases the costs for parental choice, it is insufficient to curb such behaviours, and cannot be a determinant for achieving a local supply-demand balance in basic education.

On the contrary, it plays a crucial role forming unequal access to basic education under the synergistic effect of the three influencing factors.

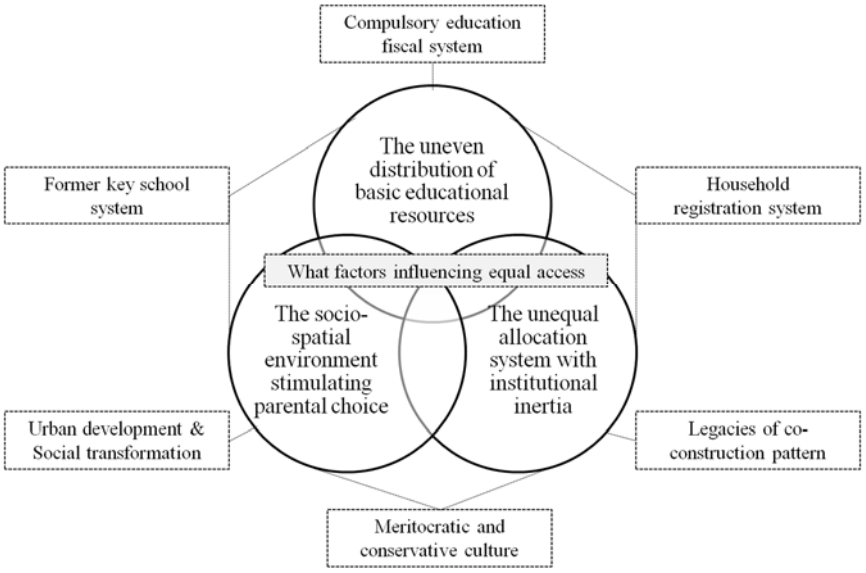

*Figure 6.*The three dimensions of factors influencing 'attending nearby schools'

5.2 The policy distortion on schooling nearby

'Attending nearby schools' is a sound principle of policy-making in school enrolment to connect residences with placement rights for both ethical connotations and legal privilege. But the greatest distortion of it in practice is that the compliance with the principle is executively judged by not an actual residence but a residence register or proof. Due to the local educational fiscal system that only serves the native registered population, it has been clearly stated in the law that the local governments shall ensure school-age children to enrol in the school nearest the places where their residence (*hukou*) is registered (but is not always consistent with their actual residence (Wu, 2013). A household registration system is the key in connecting property rights with admission qualifications that contributes to the practices of 'choice by mortgage' and 'relocate without transferring *hukou*' in central Beijing and it is definitely not suitable for the fact of increasing urban mobility. The disintegration of the work-unit system and housing commercialization all throw down the gauntlet to this traditional system of urban management. Indigenous people tend to stay in the old welfare system no matter where they move while new comers are facing high thresholds to get access to local public services. So not surprisingly, the conflict largely exists between the school district system aimed at suppressing parental choice, and the reality that the uneven distribution of quality educational resources, together with rapid urban expansion, has spontaneously increased the need for families to relocate or travel.

6. CONCLUDING REMARKS

The form of *de jure* school catchment areas in China which serves to allocate school places to a rigidly designated residential area mandatorily is insufficient to achieve "attending nearby schools" in basic education for

many reasons, but may give rise to the discrimination of different social groups. By a typical case study of Xicheng District, Beijing, this paper explores the implication of *de jure* catchment areas which directly represents the target area that public school places are allocated to by education sectors. The policy implication of attending nearby schools is quite different from that in terms of spatial proximity and the subdivision is doomed to be controversial particularly in competitive areas.

Mostly it can be seen as a 'top-bottom' administrative system focusing on allocating resources to designated targets, rather than the local structure, to organize the provision of basic education service and manage their daily operation. In the name of attending nearby schools/nearby enrolment, such a space-related admission policy adds the access to education service to different areas directly, which makes the planning principle of schooling nearby only in the sense of proximity fail. Given the education inequalities formed by history in China, this means that different inhabitants registered from different areas enjoy different admission rights only on account of locational bonus or administrative directives without participating in any management or undertaking any responsibilities, which worsens the unequal access to education in many ways. It is has little relation with the authentic meaning of 'nearby', neither to the standards of liveability nor to public opinions. Also, it is not difficult to understand why the visualized information of the *de jure* catchment area was not transparent to the public in competitive areas, since the justification in subdivision did not stand up to public scrutiny. Also the country lacks any incentive to increase schooling options such as public-private schools or special inter-district schooling plans for parents outside the sole school district system. Such situation is very distinct from that in western countries.

The influencing factors such as the unbalanced education supply, the increasing parental choice and the *hukou* system etc. are drawn to be underlying causes and there is definitely a complex situation in competing for public resources during rapid urban and social transformation. Since then the mismatch between school composition and the counterpart population have been considerable. Various responses to policies based on *hukou* status, social capital and locational advantage helped to describe the flaws of the system. In contemplating the framework of influencing factors, the role of planning and management sectors in rectifying the distortions of the enrolment system is highly anticipated in addition to the exterior efforts on equalizing educational resources. It remains a daunting task to overcome the institutional legacies that resulted in social inequalities and to innovate the mechanism of basic education provision. As can be seen from the subdivision of *de jure* catchment areas, only administrative factors dominate in dividing designated areas for enrolment and there lacks a clear acknowledged definition of 'nearby'. Such policies are directly related to public welfare and the operation should be modified in a process involving public feedback. After all, by tracing the roots of the problems, the achievement of attending nearby schools while assuring equal access is a systematic social project calling for progressive reforms in the whole system.

ACKNOWLEDGEMENTS

The author would like to acknowledge the support of Xicheng-Tsinghua Tongheng Urban Data Lab (xc.urbandatalab.com) in providing the GIS database of Xicheng District on which this article is carried out. The work

described in this paper was also substantially supported by a grant from the Research Grant Writing Fund of the College of Liberal Arts and Social Sciences, City University of Hong Kong [Project No.9618005].Special thanks are due to the members in 2015 IRSPSD Workshop for their advice and assistance in the progress of many aspects of the research.

REFERENCES

BICP (Beijing Municipal Institute of City Planning and Design). (2011).*Special Plan of Basic Educational Facilities in Beijing Municipality (2011-2020).*

BICP (Beijing Municipal Institute of City Planning and Design). (2013).*Public Opinion Poll on Urban-rural Planning Implementation in Beijing (2013).*

BMCE (Beijing Municipal Commission of Education). (2014). "New education map in Beijing", *China Education Daily*, 4-19, (001). (In Chinese)

Cheshire, P., Sheppard, S., (2004). "Capitalising the value of free schools: The impact of supply characteristics and uncertainty", *Economic Journal*, (114), 397-424.

Easton, S., Ferrari E. (2015). "Children's travel to school—the interaction of individual, neighbourhood and school factors". *Transport Policy*, (44), 9-18.

Gorard, S. & Smith, E. (2004). "An international comparison of equity in education systems", *Comparative Education*, 40(1), 15–28.

Hamnett, C., Butler, T. (2013). "Distance, education and inequality". *Comparative Education*, (49), 317-330.

Huang. R. Q. (2006). "Population change in Beijing and its impact on basic education". *Market & Demographic Analysis*, 12(3), 51-60. (In Chinese)

Hu, W.Y., Zheng, S.Q., and Wang, R. (2014). "The capitalization of school quality in home value: A matching regression approach with housing price-rent comparison", *China Economic Quarterly*, (13), 1195-1214. (In Chinese)

Ingram, G.K., Kenyon, D.A. (2014). *Education, Land, and Location.* Lincoln Institute of Land Policy, Cambridge.

Lai, F., Sadoulet, E., and de Janvry, A. (2009). "The adverse effects of parents' school selection errors on academic achievement: Evidence from the Beijing open enrolment program", *Economics of Education Review*, 28(4), 485-496.

Li, J. (2007). *Analysis on the nearby enrolment policy of the compulsory education in China*, East China Normal University, Shanghai. (In Chinese)

Noreisch, K. (2007). "School catchment area evasion: the case of Berlin, Germany". *Journal of Education Policy*, 22(1), 69-90.

Parsons, E., Chalkley, B., Jones, A. (2000). "School catchments and pupil movements: a case study in parental choice". *Educational Studies*, 26(1), 33-48.

Phillips, R. & Plessis, J. (2003). "Quantitative methods in educational research: the role of numbers made easy (Book Review)".*British Educational Research Journal*, 30(1), 202.

Reay, D. (2012), "What would a socially just education system look like?: saving the minnows from the pike", *Journal of Education Policy*,(27), 587-599.

Taylor, C. (2007). "Geographical information systems (GIS) and school choice: The use of spatial research tools in studying educational policy", in *Spatial Theories of Education: Policy and geography Matters*, Eds. K., Gulson, C., Symes. Routledge, New York & Abindgon, UK, 77-94.

Tsang, M C. (2001). "School choice in the People's Republic of China", *Choosing choice: School choice in international perspective*, 64-195.

Wu, X. X. (2013).*School choice in china: A different tale?* Routledge, New York.

Xian, L. P., Wang, J. et al. (2014). "Key points in the implementation of compulsory schools admission work addressed by the responsible comrades from education departments in 19 cities", *Basic Education Reference*, (9), 7-22. (In Chinese)

Yang, D. (2006).*The Ideals and Reality of Equal Education of China*, Peking University Press. (In Chinese)

Yang, S.R. (2013). *Adjustment and planning study of urban elementary and secondary schools layout*, Northwest University, Xi'an. (In Chinese)

Zhang, Y. H. (2011). "The retrospect and prospect of elementary and high school planning and construction since 1949", *Planners*, (2), 104-108. (In Chinese)

Zheng, S. Q., Hu, W. Y., and Wang, R. (2012). "How much is a good school worth in Beijing? A matching regression approach with housing price-rent comparison." in G*lobal Chinese Real Estate Congress (GCREC) 2012 Conference*, Macao, China.

Zheng, S. Q., Sun, C., and Lu, M. (2014). "Education resource allocation, traffic congestion and air pollution—A study taking Beijing as an example". (Working paper)

Zhu, J. C. (2001). "Schooling nearby: a right or an obligation?", *Journal of the Chinese Society of Education.* (6), 9-12. (In Chinese)

Zou, D. D. (2012). *Analysis on school district housing and educational equity*, Fudan University, Shanghai. (In Chinese)