

Study on Characteristics and Patterns of Beijing's Migrant

Population

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Massive population boosts rapid development of local economy, while bringing profound social transformation. This study limits spatial domain of migrant population to towns and street neighborhood, in other words, we only study two groups of migrant population: 1) Separation between household registered and actual residences (People with Beijing hokou whose residence is different from the place of household registration); 2) Urban immigrants residing in Beijing for long time (People from other provinces and municipalities). This study, aided by data from 6th National Population Census, probes on the characteristics of the two groups, generalizes the population movement patterns, and provides basis for policy-makers.

I. Analysis on migration characteristics

1. Intra-city migration characteristics

i. A large increase in intra-city migration

2010 census indicates that among Beijing's permanent residents, 3.454 million resided in the place other than that of household registration, taking up 27.5% of the total. Compared with the figure from 2000 census, intra-city population grew by 1.279 million.

ii. Young people in the majority and females more than males.

Males made up 49.4% of the overall intra-city migration population at 1.706 million, and females of 1.748 million registered 50.6%. Sex ratio stands at 97.6, lower than the sex ratio of permanent residents in general (100.5). Look at the age distribution: 66.6% aged 20 to 54, led by 25 to 29 age group at 11.4%.

iii. Relocation mainly resulted from demolition, family moving and business engagement .

Demolition, family moving and business engagement served as main causes for such separation, at 30.2%, 13.9% and 12% respectively, together making up 56.1% of the total intra-city migration population.

iv. Length of separation prolongs

It's usually quite long for residents not living in the place of registered household, the average time for separation of actual and registered household is 5.5 years. As 37.1% have stayed separate for six years or over.

2. Characteristics of migrants to Beijing

i. Steady growth of migrants to Beijing

Migrants to Beijing are 7.045 million, making up 35.9% of the permanent population. Compared with 2000 national census, the number of migrants to Beijing has increased by 4.477 million, an increase of 448,000 migrants per annum, and its annual growth rate is 10.6%, a rate far higher than average growth of 3.8% for permanent residents.

ii. Rational gender make-up and young age structure

2010 census shows that of migrant population without Beijing hokou, migrant

male and female population stood at 3.827 million and 3.218 million respectively, so gender ratio of 118.9 saw a dramatic fall from 156.8 recorded in 2000. As concerns age, migrants to Beijing tend to be relatively young with medium age of 29.6, 6.1 years younger than the average of permanent residents.

iii. Distinct rise of overall education level

Education level for migrants to Beijing has increased substantially in the past ten years, the average years of education by migrants to Beijing is 10.9, 1.5 years increase over 2000. 24.4% of this population received at least college education, 14.5% upswing in comparison to 2000.

iv. Origin of migrants to Beijing is relatively centered

65.7% of the migrants to Beijing come from Hebei, Henan, Shandong, Anhui, Heilongjiang, Hubei and Sichuan, among which Hebei-originated population of 1.559 million, Henan and Shandong followed with 980,000 and 598,000, making up 22.1%, 13.9% and 8.5% accordingly.

v. Temporary employment and business engagement are the key reasons for migration

73.9% of migrants to Beijing came to seek employment or engage in their own businesses, 8% moved with family and 4.7% came to study and get professional training. Two conspicuous changes occurred in comparison to 2000: the segment that seek employment and engage in business shot up to 73.9% from 68.3% whereas the group pursuing academic knowledge and training plummeted from 10.3% to 4.7%.

II. Study on population migration patterns

1. Study on intra-city migration pattern

Big-scale urban renewal and construction of new zones and steady improvement of housing condition have paved the way for intra-city migration, and seeking high-quality public resources is the pivotal force for separation of actual and registered household.

i. Migration within functional zones

Data shows that 2.023-million population in total floated within different functional zones of Beijing, 58.6% of the entire intra-city migration. Moving after demolition, family relocation, seeking employment and engaging in one's own businesses are main causes for population migration.

Table 1 Top three causes for intra-city migration within four functional zones

Migration state	Top cause (%)	Secondary cause (%)	No.3 cause (%)
zone of capital's core functions	Moving after demolition (31%)	Marriage (12.4%)	Family relocation (11.7%)
zone of city's extended functions	Moving after demolition (25.8%)	Family relocation (14.9%)	Seeking employment and engaging in business (11%)
new development zone	Moving after demolition (33.9%)	Family relocation (13.8%)	Seeking employment and engaging in business (12.8%)
ecological preservation zone	Moving after demolition (28.5%)	Seeking employment and engaging in business (22.4%)	Family relocation (14.8%)

ii. Intra-city migration across functional zones

We classify intra-city migration across functional zones into outbound and inbound population based on differing geographic locations. Outbound population refers to intra-city migration from functional zones close to core functional zone to

outlying zones, and the reversal migration is referred to as inbound population. Of the total 1.431 million intra-city migration across functional zones, outbound population of 1.119 million makes up 78.2% and inbound population of 312,000 takes up 21.8%.

Close to two-thirds of outbound population migrated from the core function zone, the majority of out-bound population entered into the adjacent extended-function zones. Another one-third of the outbound population came from the zones of core functions, and most of such people entered into the new development zones.

Moving after demolition and family relocation are the main causes for outbound population migration, 52.5% of the overall, especially the outflow from zones of capital's core functions and zones of city's extended functions. It also indicates the spatial advantage that extended functions zones and new development zones have over the core functions zones.

Close to 1/3 of inbound population migration in Beijing of 312,000 came from zones of extended functions and entered into zones of capital's core functions, and approximately half of the inflow followed the route of new development zones and ecological preservation zones to extended functions zones. The main contributors to inbound population migration are seeking employment and engaging in business and study & training, making up 42.1% of the overall, which serves as the evidence of economic and educational edge that core functions zones and extended functions zones possess.

The analysis above points out that intra-city migration still plays a predominant role, but movement across functional zones has shown the sign of broadening and acceleration. Though Beijing's urban and suburban areas have quite potent attraction for migration population with more advanced level of social and economic development as well as optimal public resources, the limited space and rising living cost inevitably will force population outflow to the outlying districts and counties.

2. Study on migration patterns of migrants to Beijing

i. Relationship between income and urbanization level of ingoing area (settlement) with migrant population

Income represents the economic development level of an area. In 2010, Beijing's average salary for employees at non-private sector was RMB65,683, 1.8 times of the national average and 2.3 times of minimum wage level, ranking second in the country just behind Shanghai's RMB71,874.

Urbanization is a key indicator of a city's development process. Beijing's urban population reached 16,859,000 in 2010, 86% of the overall population.

Taking urban employees' average salary and urban population ratio as independent variable, population of migrants to Beijing as dependent variable, we conduct regression analysis on 1978-2009 data using spss software. Construct regression equation based on the parameters above:

$$y=0.007x_1+3.031x_2-156.059 \quad (1)$$

Y is the total population of migrants to Beijing, X_1 is urban employees' average salary and X_2 is the urban population ratio.

The following conclusion can be drawn from the preceding model: The total population of migrants to Beijing has positive correlation with capital's income and

urbanization level; the quantitative relation is: RMB 1-increase to urban employees' salary will trigger an influx of 70 migrants to Beijing and one percent increase to urban population ration will lead to an increase of 30,031 migrant population.

ii. Regional difference's impact on migrant population

Along with the direct relationship with settlement's income and urbanization level, the total population of migrants bears close ties to permanent population size of a province, income level and the distance from Beijing.

Taking population size of different provinces, distance from Beijing and average salary of each province as independent variable, total population of migrants to Beijing from different provinces as dependent variable, we conduct regression analysis on the related data⁴ and formulate the following equation:

$$y = 2.801x_1/x_2 - 8.549x_3 + 317462.4 \quad (2)$$

Y is set as the total population of migrants to Beijing from a single province, X_1 being the permanent population size of a province, X_2 being the distance of the province from Beijing, and X_3 is the average urban salary of that province.

We take x_1/x_2 and x_3 as independent variables for binary linear regression analysis when constructing the regression model. The composite variable in equation (2) x_1/x_2 can be called "relative migrant population", and it derives the term from the distance of departing place to Beijing. As the distance increases, the population size will decline accordingly.

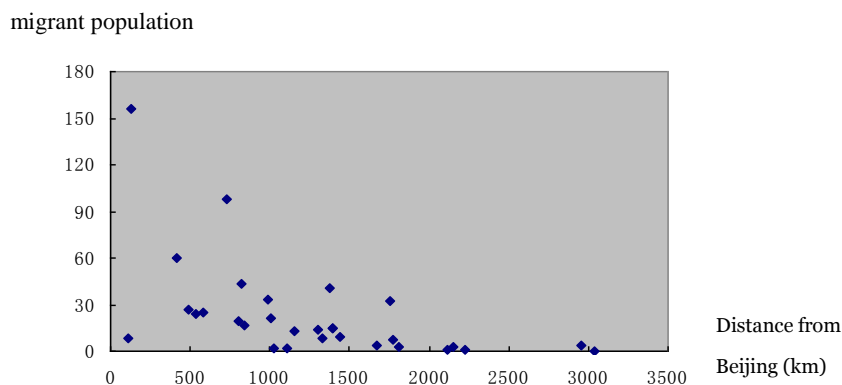


Figure 1 Total population of migrants to Beijing and their distance from Beijing scatter diagram (x axis is the total population migrants to Beijing)

The scatter diagram reveals certain negative correlation between the total migrant population and the distance from Beijing. Such negative correlation has close link to migrant population, i.e. element A in $Y=A/X$ is positively associated with migrant population). It's understandable that if the distance remained constant, the size of Beijing-bound migrants would bear nearly positive linear relationship with its permanent population.

From the analysis done above, the following conclusions may be drawn. The population of migrants to Beijing originating from certain provinces has positive linear relationship with their permanent population size, and negative linear

relationship with their income level. The specific quantitative relation is: every one increase to local permanent population will lead to an increase of $2.801/d$ potential migrants to Beijing (d is the distance of the province from Beijing); every Yuan increase to local average salary will result in a reduction of 8.549 migrants to Beijing.

III. Insights and suggestions

1. Advancing scientific urban planning and guiding rational population distribution

The sustainable increase of population in Beijing has generated a series of challenges confronting mega-cities, and population capacity should be elevated through rational population distribution. It's critical to improve the construction of new development zones, making them the fitting destination for migration of population and transfer of functions from downtown and core functions zones; to upgrade infrastructure in the new development zones, proactively guiding the expansion and transfer of high-quality educational, medical and cultural resources from old city center, narrowing the gap of social development between urban, suburban and outlying areas. Efforts as well as publicity are needed to facilitate the industry development in the outlying areas, promoting the transfer and concentration of industries to the development zone and in the new towns built on key industry sector.

2. Rational distribution of public resources and end to separation of actual and registered residence

The overall arrangement of population residence accompanies the distribution of public service resources. The separation of actual and registered residence is the exhibition of uneven and unbalanced distribution of public service resources in Beijing. In the process of urban renewal and demolition of shantytowns, Beijing should better handle the relationship between relocation and employment and public resources allocation. More high-quality educational resources and public service facilities such as big-scale medical institutions should be settled in the population and industry inflow areas; meanwhile, more desirable employment opportunities should be created in the extended-functions and new development zones, making it easier for residents to work, shop, attend school and receive medical treatment. Ultimately, as a result of the measures taken, the tide of intra-city migration could be eased while the traffic congestion will be alleviated.

3. Explore new system of population management and improve population service and administration

On the one hand, we should change the management mode of the separation of actual and registered residence, gradually replace hukou-based management with personal ID-based management, replace registered residence management with actual residence management, and replace static population management with dynamic population management; on the other hand, we should encourage innovation on migrant population management, gradually achieve migrant population's equal access to basic public services, and seek the integrated model of managing permanent as well as migrant population, and tackle the tough issues of social security, medical care and getting education faced by migrants to Beijing.

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