Membership Rules and the Pricing of Local Public Goods: Evidence from China's Hukou System

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Abstract

We study residency-contingent membership (China's *Hukou*) as an institution that prices access to club-like local public goods and reshapes migration trade-offs among wages, prices, and amenities. A simple model aggregates private consumption with publicly provided inputs whose effective user price depends on membership, implying: (i) private spending and satisfaction rise with social endowment and residency value; (ii) residency value and wages substitute along indifference curves; and (iii) sector technology magnifies the payoff to membership where access is rationed. Using an original micro survey from Beijing, Shanghai, and Guangzhou (1,565 respondents) that records expenditures, subsidies/reimbursements, domain satisfaction, and rich parental background, we find: insiders spend more and report higher satisfaction in congestible services; medical reimbursements respond to status while education transfers are comparatively flat; migrants exhibit a wage-residency trade-off; and high-tech employment raises income and job satisfaction for migrants but not locals. Beyond China, the mechanism generalises: many jurisdictions tie user prices and queue priority for schooling, healthcare, and housing to administrative membership. China provides a hard case and unusually clean lens: common language, shared citizenship, and unified legal/finance systems strip away cross-border confounding elements – allowing us to quantify residency-based pricing. Policy margins–equalization, portability, and employer-sponsored conversion–can reduce mismatch while preserving fiscal discipline.

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1 Introduction

Migration across political boundaries is a pervasive feature of modern economies and has generated a large empirical and theoretical literature—from business-cycle comovement and labour mobility to structural change and the move out of agriculture (Sahota, 1968; Saks and Wozniak, 2011). In developing contexts, the reallocation of labour away from agriculture has been called a 'quintessential feature of economic development and modernization' (Rozelle et al., 1999, p. 287). Within this agenda, scholarship has converged on several themes: differences between skilled and unskilled migration, selection, and adjustment to the labor-market (Cole and Sanders, 1985; Day, 1992; Dustmann and Okatenko, 2014; Harris and Todaro, 1970; Lewis, 1954; Young, 2013); the socio-economic attributes of migrants and heterogeneous motives to move (Bender and Heywood, 2009; Chevalier, 2003; Villarreal, 2016); and the consequences for aggregate performance and the distribution of welfare between insiders and natives (Borjas, 2015; Landini and Rinaldi, 2025; Schultz and Sjöström, 2001). A common thread is that individuals migrate to raise expected earnings and to improve access to publicly provided goods and services (Bayoh et al., 2006; Kennan and Walker, 2011; Razin and Sadka, 2000).

We take an institutional view of these choices. Institutions—rules, structures, and norms—govern access to resources and coordinate behaviour (Binmore, 2015; North, 1990; Williamson, 2000). When rules generate selective excludability over otherwise non-rival inputs (at least until congestion), local services take on *club-good* properties: membership sets *effective user prices* and queuing priority (Buchanan, 1965). Governance arrangements—from formal statutes to administrative procedures—shape compliance and adaptation (Ostrom, 1990). Although first developed for private consumption, club theory has been applied to collective consumption (fishing rights, transport) and to residency and citizenship regimes (from 'golden passports' to gated communities), where membership acts as a *pricing* and *enforcement* device with fiscal and distributional consequences (Berglas and Pines, 1981; Konrad and Rees, 2020; Manzi and Smith-Bowers, 2013; Nitzan and Ueda, 2009; Sieg et al., 2020). Classic Tiebout logic complements this lens by modelling jurisdictions as bundles of taxes and services disciplined by mobility (Tiebout, 1956), with expected earnings and public-service quality predicting location choice (Bayoh et al., 2006; Kennan and Walker, 2011; Razin and Sadka, 2000).

China provides both a *hard case* and an unusually clean lens on residency-based institutions. It mirrors core features of international migration—residents without local *Hukou* (hereafter, *non-members*) face tiered access to local public goods—yet strips away cross-border confounds (common language, shared citizenship and legal system, nationally standardised curricula and qualifications, integrated labour and tax-transfer systems). The principal margin that varies is the administrative *Hukou* membership rule and its enforcement at gateways. In practice, access to schooling, healthcare, and housing is mediated by *Hukou*; absent local status, migrants face rationing or higher effective user prices; entitlements differ by account type (notably agricultural vs. non-agricultural) despite partial convergence; and conversion remains limited and often employer-dependent. Clearly, such employer-sponsored conversion (for example, through work-unit quotas or 'talent-introduction' schemes) is analogous to high-skilled, employer-tied migration regimes elsewhere (e.g., employment-based permanent residence, the EU Blue Card, and points-based systems; (Docquier and Rapoport, 2012; Kerr et al., 2016)). From an

institutional perspective (North, 1990), *Hukou* defines membership and selective excludability, transforming congestible local services into club goods: insiders obtain lower user prices and queuing priority; outsiders face rationing or pay more (Buchanan, 1965). Although our empirical setting is China, the mechanism is general: many jurisdictions ration congestible local services by administrative membership—residency permits, domicile/registration rules, in-district school entitlements, in-state tuition, public housing eligibility, locality-tied health schemes. Wherever prices or queues hinge on status, three predictions follow—(i) membership lowers effective prices and raises utilisation/satisfaction; (ii) wages trade off against residency value; and (iii) higher sector technology magnifies the payoff to membership—pointing to policy margins of equalisation, portability, and targeted conversion. These observations align with recent spatial-policy syntheses that place migration frictions at the centre of welfare and misallocation (Bryan et al., 2025; Fajgelbaum and Gaubert, 2025), and with classic concerns about free riding and incidence in local public finance (see Schultz and Sjöström, 2001, p. 315; Borjas, 2015; Holzmann, 2018; Sachs, 2016; Warman and Worswick, 2004).

We organise the analysis around three questions. (i) What are the welfare consequences of migration and membership for individuals—migrants and locals—when access to public inputs is membership-contingent, and is there a 'free-rider' problem in this setting (Schultz and Sjöström, 2001, p. 315)? (ii) How does sectoral productivity interact with membership to shape utility, given differences in earnings capacity and in the valuation of local services? (iii) Do migrants trade off wages against residency value in megacities where the bundle of public inputs is richer but rationed by status?

Our approach places the institution at centre stage. We model *Hukou* as a residency-contingent *membership rule* that maps status into the *effective user price* of public inputs and into queue priority at enforcement gateways (school admissions, medical reimbursement systems, public housing). By lowering insiders' user prices relative to outsiders', the institution creates a wedge between where one *works* and where one can fully *consume* local public goods. A parsimonious model then generates three testable implications: (1) residency value and social endowment jointly raise private outlays on membership-linked domains and increase satisfaction; (2) residency value substitutes for wages along indifference curves; and (3) sector technology magnifies the payoff to membership where access is rationed.

We bring this perspective to an original micro survey from Beijing, Shanghai, and Guangzhou (N=1,565). The instrument records out-of-pocket expenditure and realised inflows (subsidies/reimbursements) in housing, healthcare, and education, alongside domain satisfaction and rich parental background. Three facts emerge. First, membership lowers user prices and raises utilisation: insiders spend more on health and report higher satisfaction in congestible services, whereas agricultural accounts—especially pre-reform—are associated with costlier private adjustments and lower satisfaction. Transfers corroborate enforcement at gateways: insiders receive larger routine medical reimbursements, while education transfers are comparatively insensitive to residency, consistent with heterogeneous verification and rationing. Second, we document a residency-wage trade-off in overall utility: among migrants, the wage-satisfaction gradient attenuates once parental endowments are considered, consistent with residency value substituting for wages. Third, technology complements membership: naturalised migrants are more likely

to work in high-technology sectors, and high-technology employment raises income and job satisfaction for migrants but not for locals.

Our contribution is threefold. Conceptually, we formalise a residency-based pricing institution and interpret satisfaction as a revealed evaluation of membership in a congestible, quasi-club environment. Empirically, we quantify incidence on both sides of the gateway—private outlays and realised inflows—exploiting variation in current status and conversion history to isolate insider-outsider contrasts. Substantively, we show that equalisation and portability policies, together with employer-sponsored conversion in high-technology sectors, can reduce mismatch and underemployment while preserving fiscal discipline.

The rest of the paper proceeds as follows. Section 2 details the residency institution, enforcement gateways, and margins of change. Section 3 develops the model and derives testable propositions on pricing, wage-residency trade-offs, and technology complementarity. Section 4 introduces the Beijing-Shanghai-Guangzhou survey, measures, and identification posture. Section 5 presents the empirical results on expenditures, transfers, satisfaction, and sorting. Section 6 interprets mechanisms and policy incidence. Section 7 concludes; the Appendix collects proofs, measurement details, and extended tables.

2 Hukou: the institutional context

To connect the institutional lens in the Introduction to our setting, we treat *Hukou* as a household-registration regime that assigns *local* versus *non-local* membership at the city or county level. In our framework it supplies three primitives: (i) a *membership rule* (local *Hukou* vs. non-local accounts); (ii) a *pricing schedule* that maps status into the effective user price and queuing priority for congestible public inputs—schooling, healthcare, and housing—at enforcement gateways; and (iii) a *conversion technology* (employer sponsorship/points, marriage, military service) that governs transitions from outsider to insider status. Because movers are citizens who share language, curricula, and the legal system, China's setting strips away many cross-border confounds, allowing cleaner identification of how *membership-contingent pricing and rationing* shape behaviour and welfare (Buchanan, 1965; North, 1990; Ostrom, 1990).

Historically, the contemporary *Hukou* registration model was formally introduced in 1958, but its regulatory architecture emerged gradually during the early 1950s. A 1950 statement of intent laid the groundwork; by 1954 citizens had been issued *Hukou* registrations and rules governing transfers were in place. The core aim was to regulate and constrain rural-to-urban migration under a development strategy that prioritized industrialization. Urban *Hukou* therefore conferred favourable access to public goods—healthcare, housing, schooling—and to broader welfare programs, while rural residents and non-locals in cities received markedly less (Chen et al., 2017; Song, 2014).

At the city level, megacities layered additional eligibility rules on top of the national system. Beijing, for example, requires non-locals to have worked and paid taxes for a minimum period before purchasing housing (Beijing Municipal Government Office, 2011), and counterfactual evidence suggests such restrictions slowed price growth (Du and Zhang, 2015). Healthcare costs further constrain non-locals, who exhibit lower insurance take-up and report access barriers

(Hesketh et al., 2008).

Conversion pathways to local membership have historically been narrow—selected university graduates via employer sponsorship; retired People's Liberation Army (PLA) officers; cases involving requisitioned land; marriage to a local (Cheng and Selden, 1994; Fan et al., 2009); and, more recently, points-based hukou settlement schemes in Beijing and Guangzhou (Beijing HRSS, 2024; Guangzhou Gov't, 2023). After 1978, reforms reduced disparities between agricultural and non-agricultural accounts, and since 1997 smaller cities and towns—where state-provided welfare is minimal—have loosened conversion thresholds (Chan, 2009; Song, 2014). Despite these changes, *Hukou* rules continue to bind internal migration (Chan and Zhang, 1999; Wang, 2004). Two persistent impacts stand out. First, status affects both the prices households face and the services they can access (Chen et al., 2017; Song, 2014). Second, agricultural accounts face labour-market discrimination in wages and hiring, including in state-owned enterprises (SOEs), raising search costs and separation risks (Chen and Hoy, 2011; Song, 2014; Zhang, 2010).

Since the 2010s, national reforms have sought to narrow urban-rural gaps. In 2014, the central government announced the abolition of the agricultural versus non-agricultural distinction (China State Council, 2014), and the 2017 'No. 1 Document' aimed to equalize access to public services (China State Council, 2017). Yet distinctions in access and outcomes persist in practice, as shown by reviews and empirical studies on hukou stratification in health and earnings (Chan, 2019; Song and Smith, 2019; Wu and Wallace, 2024). Contemporary work links residence-permit and *Hukou* reforms to higher settlement probabilities and service uptake, income gains, and improved health (Chen et al., 2024; He et al., 2025; Ma et al., 2024; Zhang et al., 2024), while meta-analysis documents persistent *Hukou* wage gaps (Ma et al., 2024). Outside China, quasi-experimental evidence shows large long-run earnings gains from citizenship (Hainmueller et al., 2019), consistent with a general 'conversion' channel.

We interpret *Hukou* as an institutional membership regime governing access to, and the incidence of, local public goods (Sieg et al., 2020). Membership ties eligibility for subsidized inputs (compulsory schooling, basic healthcare, housing support) to status, generating a *membership-contingent* user price. In the model, the relevant term is p^{κ}, with insiders facing $p^{\kappa}_{\text{in},t}$ and outsiders $p^{\kappa}_{\text{out},t}$, where $p^{\kappa}_{\text{in},t} \leq p^{\kappa}_{\text{out},t}$. Enforcement occurs at gateways—school admissions, medical reimbursement systems, public-housing queues and purchase eligibility—where status is verified and scarce slots rationed. Labour-market disadvantages for agricultural accounts and non-locals (including in SOEs) amplify risk and search frictions (Chen and Hoy, 2011; Song, 2014; Zhang, 2010). These primitives map directly to our propositions: membership lowers p^{κ} and raises utilization and satisfaction; wages and residency value substitute along indifference curves; and sector technology complements residency via income effects and employer-sponsored conversion.

Beyond China, analogous membership rules price access to congestible local inputs—examples include in-district school catchments, in-state tuition, municipal housing lists, and locality-tied health reimbursement regimes. Where portability is limited, insiders face lower effective user prices and greater priority, outsiders face rationing or pay more; mobility and fiscal incidence then depend on the design of the membership rule, the portability of entitlements, and conversion pathways (Holzmann, 2018; Konrad and Rees, 2020; Manzi and Smith-Bowers, 2013; Sieg et al.,

2020; Tiebout, 1956). In this sense, *Hukou* replicates within a single polity the institutional mechanisms commonly studied in international migration and welfare states, providing a hard test of club-good pricing and enforcement with unusually sharp identification.

3 Theoretical model

Building on Section 2, we formalise the institutional logic in a minimal household model whose purpose is to *price the membership institution* rather than to deliver a full general-equilibrium account. Following North (1990) and Buchanan (1965), we encode *Hukou* as an institutional bundle with three primitives: (i) a binary *membership rule* $m_{i,t} \in \{0, 1\}$ (local *Hukou* vs. non-local); (ii) a *pricing schedule* that maps status into a membership-contingent user price $p^{\kappa}_{i,t}$ at enforcement gateways (schooling, healthcare, housing) with $p^{\kappa}_{\text{in},t} < p^{\kappa}_{\text{out},t}$; and (iii) a *conversion technology* (e.g. employer sponsorship/points) governing transitions in $m_{i,t}$. A locality-specific residency value $\bar{H}$ summarizes the menu and reliability of publicly provided inputs and the priority of queues. These primitives are observable at gateways (admissions, reimbursements, housing eligibility) and motivate the empirical tests on expenditure, transfers, satisfaction, and sorting.

We distinguish two classes of city-provided inputs: (i) universal services (e.g., parks and cultural amenities), and (ii) membership-restricted services regulated by *Hukou*—notably basic healthcare, compulsory schooling, and housing support. For example, any Beijing resident can purchase a ticket to the National Centre for the Performing Arts, whereas access to public housing, medical reimbursement, and compulsory schooling is rationed at *Hukou* gateways.

To anchor magnitudes, we note that in 2018—the survey year—per capita general public budget outlays in Beijing, Shanghai, and Guangzhou exceeded the national average.[1] Our empirical analysis pools respondents from these three megacities and includes city fixed effects to absorb cross-city differences; identification comes from within-city variation.

Let $m_{i,t} \in \{0, 1\}$ denote the institutional *membership* of individual i at time t (1 = holds local *Hukou*, 0 = non-local). The institutional pricing schedule maps membership to the user price of public inputs:

$$p^{\kappa}_{i,t} = \begin{cases} p^{\kappa}_{\text{in},t}, & \text{if } m_{i,t} = 1 \quad \text{(insider / local member)}, \\ p^{\kappa}_{\text{out},t}, & \text{if } m_{i,t} = 0 \quad \text{(outsider / non-local)}, \end{cases} \qquad \text{with} \qquad p^{\kappa}_{\text{in},t} < \bar{p}^{\kappa}_{t} < p^{\kappa}_{\text{out},t},$$

so membership lowers the effective price of public inputs (the club-good margin). Define $\bar{H}$ as the *residency value* of a megacity—an institution-induced component of utility that aggregates the incremental access to public services conferred by membership and the locality's supply of such services. Institutional membership raises $\bar{H}$ and, holding preferences constant, substitutes for private income in delivering utility.

At time t, individual i brings human capital h accumulated in the home locality. We assume h is increasing in social endowment S and the value of home residency $H_{ji,o}$ (where o denotes

[1] In 2018, per capita general public budget outlays were roughly 2.2× the national average in Shanghai and Beijing (about RMB 34,500 vs. RMB 15,830) and modestly above the average in Guangzhou (about RMB 16,810) (SMBS, 2019; BMBS, 2019; GMBS, 2019; GZ Finance Bureau, 2019; NDRC, 2019; NBS, 2019).

'home'):

$$h_{ji,o} = h(S, H_{ji,o}), \qquad \frac{\partial h}{\partial S} \geq 0, \quad \frac{\partial h}{\partial H_{ji,o}} \geq 0.$$

Let $\bar{H}_{ji,o}$ be the individual's megacity-residency value. For migrants, $H_{ji,o} \neq \bar{H}_{ji,o}$ (the enhancement is a motive to migrate); for non-migrants $H_{ji,o} = \bar{H}_{ji,o}$. For notational simplicity we later write $\bar{H}$ when no confusion arises.

A migrant i in the megacity at time t consumes $\{c_{i,j,t}\}$ of n private goods/services ($j = 1, \ldots, n$) and $\kappa_{i,t}$ units of publicly provided inputs (e.g., basic healthcare access, school enrolment, housing support). Utility increases in private consumption and in satisfaction from public inputs Γ:

$$\frac{\partial \Gamma}{\partial \kappa_{i,t}} \geq 0, \qquad \frac{\partial \Gamma}{\partial \bar{H}} \geq 0.$$

Institutionally, $\bar{H}$ is increasing in $m_{i,t}$ (membership) and in city attributes that expand the *menu* of public inputs; $p^{\kappa}_{i,t}$ is decreasing in $m_{i,t}$ by construction. These two channels (price and value) are the core institutional levers.

3.1 Household

Agents consume both private and public goods. Private goods must be purchased; public goods are accessed at subsidised prices funded by taxes and transfers. Agent i chooses $\{c_{i,j,t}\}$ and $\kappa_{i,t}$ to

$$\max_{\{c_{i,j,t}\},\, \kappa_{i,t}} \int_{v=t}^{\infty} e^{-\rho v}\, u_{i,v}\, \mathrm{d}v \quad \text{with} \quad u_{i,v} = \Big(\sum_{j=1}^{n} c_{i,j,v} \Big)^{\sigma} \Big[\Gamma(\kappa_{i,v}, \bar{H}) \Big]^{1-\sigma}, \tag{1}$$

where $\rho > 0$ is the discount rate and the horizon is infinite. The period budget constraint is

$$(1 - \tau_{I_i})\, w_{i,t}\, h_{ji,o} = \sum_{j=1}^{n} p^{c}_{j,t}\, c_{i,j,t} + p^{\kappa}_{i,t}\, \kappa_{i,t}, \tag{2}$$

where $w_{i,t}$ is the wage (per unit of human capital), $p^{c}_{j,t}$ the price of good j, $p^{\kappa}_{i,t}$ the unit price of public services to i, and τ_{I_i} the income-tax rate. Because *Hukou* restricts access, migrants without local *Hukou* face $p^{\kappa}_{i,t} > \bar{p}^{\kappa}_{t}$, while locals face $p^{\kappa}_{i,t} < \bar{p}^{\kappa}_{t}$. This is precisely the institutional price channel implied by the club-good interpretation (Buchanan, 1965).

Public services are financed via taxes and transfers:

$$\dot{\kappa}_{i,t} + \delta\, \kappa_{i,t} \;\geq\; \tau_{I_i}\, w_{i,t}\, h_{ji,o}, \tag{3}$$

where $\delta \geq 0$ is the depreciation rate of public services.

Solving (1) subject to (2)-(3) yields (FOCs in the Appendix):

$$\kappa^{*}_{i,t} = \frac{(1-\sigma)\, \varepsilon_{\kappa_i \Gamma_i}\, (1 - \tau_{I_i})\, w_{i,t}\, h_{ji,o}}{p^{\kappa}_{i,t} \left[(1-\sigma) \varepsilon_{\kappa_i \Gamma_i} + \sigma \right]}, \tag{4}$$

$$c^{*}_{i,j,t} = \frac{\sigma\, (1 - \tau_{I_i})\, w_{i,t}\, h_{ji,o}}{p^{c}_{j,t} \left[(1-\sigma) \varepsilon_{\kappa_i \Gamma_i} + \sigma \right]}, \tag{5}$$

where $\varepsilon_{\kappa_i \Gamma_i} = \frac{\kappa_{i,t}}{\Gamma} \frac{\partial \Gamma}{\partial \kappa_{i,t}} \geq 0$ is the elasticity of satisfaction with respect to public services.

Since h increases in S and $H_{ji,o}$, both $\kappa^*_{i,t}$ and $c^*_{i,j,t}$ are (ceteris paribus) larger for higher S or $H_{ji,o}$. They are also larger for local-*Hukou* individuals who face lower $p^{\kappa}_{i,t}$. Even migrants without a local *Hukou* may benefit if megacity prosperity raises κ^* and c^* relative to home outcomes. Institutionally, membership and richer club provision raise both the *use* and the *valuation* of public inputs.

Proposition 1. *(i) Individuals with a higher value of home-city residency $H_{ji,o}$ attain higher private consumption c and greater use of public services κ in a megacity. (ii) Individuals with higher social endowment S attain higher c and κ in a megacity.*

Using (4) and (5), satisfaction from services at the optimum can be written as

$$\Gamma(\kappa^*_{i,t}, \bar{H}) \;=:\; \tilde{\Gamma}(h_{ji,o}, \bar{H}), \tag{6}$$

i.e., a monotone function of $h_{ji,o}$ and $\bar{H}$ obtained by substituting $\kappa^*_{i,t}$ into $\Gamma(\cdot, \bar{H})$. Given $\bar{H}$ is fixed for agent i, we have:

Proposition 2. *Ceteris paribus, (i) a higher $H_{ji,o}$ implies a higher Γ in the megacity; (ii) a higher S implies a higher Γ in the megacity.*

Household welfare at the optimum is

$$u^*_i = \Big[\sum_{j=1}^{n} c^*_{i,j}(w_{i,t}, \cdot)\Big]^{\sigma} \Big[\Gamma(\kappa^*_i(w_{i,t}, \cdot), \bar{H})\Big]^{1-\sigma}, \tag{7}$$

with $\frac{\partial \kappa^*_{i,t}}{\partial w_{i,t}} \geq 0$ and $\frac{\partial c^*_{i,j,t}}{\partial w_{i,t}} \geq 0$. Totally differentiating u^*_i with respect to $w_{i,t}$ and $\bar{H}$ along an indifference locus yields:

Proposition 3. *There exists a trade-off between megacity residency value $\bar{H}$ and unit wage w at a given utility level: a migrant can accept a lower w if $\bar{H}$ is higher.*

3.2 Productivity and welfare

There are N agents and n sectors. Sector s hires N_s workers and produces $y_{s,t}$; $\sum_{s=1}^{n} N_s = N$. Assume

$$y_{s,t} = A_s\, h_{\ell}^{N_s \alpha}, \qquad N_s \alpha = 1, \tag{8}$$

where A_s is sector technology and h_ℓ the human-capital input of worker ℓ. With a revenue tax τ_{y_s} and constant-elasticity demand $\varepsilon_{p^c_s y_s} = \frac{p^c_s \, \mathrm{d}y_s}{y_s \, \mathrm{d}p^c_s} < -1$, equilibrium wages satisfy the reduced-form condition

$$w_{i,t} = (1 - \tau_{y_s})\Big(1 + \frac{1}{\varepsilon_{p^c_s y_s}}\Big)\, p^c_{s,t} A_s \;>\; 0, \tag{9}$$

where $(1 + 1/\varepsilon)$ is the marginal-revenue multiplier under constant-elasticity demand.

Using (4) and (9), the residency-value component at the optimum is

$$\Gamma^* = \Gamma\left(\frac{(1-\sigma)\varepsilon_{\kappa_i \Gamma_i}(1-\tau_{I_i})(1-\tau_{y_s})(1 + 1/\varepsilon_{p^c_s y_s})\, p^c_{s,t} A_s\, h_{ji,o}}{p^{\kappa}_{i,t}\big[(1-\sigma)\varepsilon_{\kappa_i \Gamma_i} + \sigma\big]}, \bar{H}\right). \tag{10}$$

Proposition 4. *The value of megacity residency (notably* Hukou*) for a migrant is positively related to the technology level A_s of the employing sector.*

The mechanism implies that migrants may accept wages below their frictionless expectations to access higher-value public inputs in megacities. Local *Hukou* holders, with higher entitlements, obtain even greater residency value. This helps to explain employer-sponsored *Hukou* transfers in high-technology sectors (Fan et al., 2009; Zhang, 2010) and a higher incidence of naturalised migrants in such sectors. Institutionally, high A_s magnifies the return on membership because it scales both private purchasing power (income) and the use of subsidized inputs priced by membership.

Institutional discrimination reduces the number of jobs available to migrants (Zhang, 2010). Suppose a migrant who would earn wage w without discrimination earns $w_s < w$. Combining (7) and (9), we can write

$$u_i = \left[\sum_{s=1}^{n} c_{i,s}^{*}(A_s/p^c, \cdot)\right]^{\sigma} \left[\Gamma(\kappa^{*}(A_s/p^{\kappa}, \cdot), \bar{H})\right]^{1-\sigma}. \tag{11}$$

Proposition 5. *Ceteris paribus, a migrant's utility u_i increases with the technology level A_s of the employing sector.*

4 Survey and Data

Building on Sections 2 and 3, we designed and fielded our own 2018 survey in Beijing, Shanghai, and Guangzhou (BSG) to measure how residency-linked rules operate in practice. Rather than restate the institutional primitives, we focus on the variables that enter the model: (i) membership status (local vs. non-local *Hukou*); (ii) outcomes at enforcement gateways—schooling, healthcare, and housing—captured by out-of-pocket spending and subsidies/reimbursements; and (iii) domain-specific satisfaction. These measures map to the model's membership-contingent price p^{κ} and club value $\bar{H}$.

BSG are China's three largest megacities, with dense concentrations of formal employment and comparatively generous local public expenditures. Each operates residency-based eligibility for schooling, healthcare, and housing support, providing a clean setting to examine how residency-linked access to public goods interacts with wages and sectoral opportunities.[2]

Because membership rules and enforcement intensity vary across the three cities, we employed *city-level quota sampling* to ensure variation in both *membership* (local vs. non-local *Hukou*) and *conversion opportunities* (e.g., employer sponsorship or tenure/points requirements). We validated location at submission via IP addresses, mirroring the administrative emphasis on place-specific eligibility checks. The resulting cross-section is informative about institutional incidence (insiders vs. outsiders) but is not designed to be population-representative.

Fieldwork was conducted online in late 2018 on the WJX (Wen Juan Xing) platform. We targeted at least 500 fully completed, quality-checked questionnaires per city. The realized cross-section contains 1,565 respondents: Beijing (512), Shanghai (532), Guangzhou (521). We validated reported location via IP geolocation at submission, preserved anonymity, and made

[2]Regional context and a locator map are provided in Appendix B.2, see Figure B.1.

sensitive items optional. When submissions omitted core fields (date of birth, gender, education, or satisfaction outcomes) or IP suggested a non-target location, we replaced them to meet the city quotas.[3]

Our outcomes comprise (i) overall life satisfaction and domain satisfaction in housing, healthcare, and children's education (5-point Likert); and (ii) economic quantities: monthly consumption (nondurables and services, excluding public-service items), public-service outlays (housing, healthcare, education), and corresponding inflows (housing subsidy, medical reimbursement, education subsidy). All monetary variables are measured in RMB.

To map the data to the institutional primitives, we proceed as follows. The *membership rule* (insider vs. outsider) is measured by an indicator for holding a local BSG *Hukou*, which in the model lowers the user price of public inputs p^{κ} (schools, healthcare, housing), consistent with (2)-(4). The *conversion technology* (paths into membership) is proxied by agricultural-account status recorded as of the 2018 survey and pre-2014, together with a 'local origin' indicator for being born in BSG; the pre/post-2014 split aligns with national reform milestones in Section 2 and separates baseline endowments from attained status. *Enforcement/provision nodes* are observed directly via realized inflows—housing subsidies, medical reimbursements, and education subsidies—measured at the gateways where eligibility is verified. Finally, *club value and usage* are captured by self-reported satisfaction in housing, health, and education alongside out-of-pocket expenditure in those domains, linking membership-contingent pricing to perceived quality and private adjustments.

Our treatment-style regressors are: (i) an indicator for holding a local BSG *Hukou*; (ii) agricultural-account status measured at the 2018 survey date ('current') and pre-2014; and (iii) a local-origin indicator. The 2014 split separates baseline eligibility from membership status as of 2018.

Parental party status, education, occupation, and wages proxy family social capital that shapes human capital $h(S, H)$ and the ability to navigate conversion and access procedures—an institutional channel in our model via $\tilde{\Gamma}(h, \bar{H})$. Concretely, we proxy social endowment with parental CCP membership, parental wages (logged), senior managerial/professional roles, and parental education (six-category scale aligned to respondents). Individual controls include age (and age^2), gender, education (six categories), after-tax monthly income, Chinese communist party (CCP) membership, ethnic-minority status, marital status, household size (co-residents excluding the respondent), an objective health indicator (doctor visit for a serious issue last year), years in the current city, number of children, and housing tenure (owner without mortgage/owner with mortgage/renter/employer-provided). Exact coding is documented in Appendix B.2; see Table B.1.

We pool respondents from the three megacities and include city fixed effects; estimation details appear in Section 5. Table 1 reports summary statistics for variables central to the analysis. Full descriptive statistics for all variables—observation counts, means, standard deviations, minima, and maxima—are provided in Appendix B.2; see Table B.2.

[3] Additional implementation details, quality checks, and missing-data diagnostics are in Appendix B.3.

Table 1: Key variables: summary statistics (analytic sample)

Variable	Obs.	Mean	SD	Notes
SatOverall (1–5)	1557	3.65	0.84	Overall life satisfaction
SatHousing (1–5)	1549	3.36	1.03	Housing satisfaction
SatHealth (1–5)	1550	3.55	0.96	Healthcare satisfaction
SatEdu (1–5)	911	3.62	0.95	Parents only
Monthly wage (RMB)	1565	9505	11791	After-tax
Consumption (RMB)	1353	9397	13785	Excludes public-service items
Housing cost (RMB)	1563	2382	2533	Monthly outlay
Medical reimbursement (RMB)	1564	473	921	Monthly inflow
BSG *Hukou* (=1)	1565	0.470	0.499	Local registration
Agricultural *Hukou* (current)	1565	0.265	0.441	Eligibility proxy
Years in current city	1565	15.82	13.13	Duration in BSG
Education (1–6)	1565	3.89	0.74	Highest attainment

Notes: Variable definitions and coding rules are in Appendix B.2 (Table B.1). Extended descriptives are reported in Table B.2.

5 Empirical analysis

In this section, we examine the propositions derived in section four.

5.1 Consumption, residency, and social endowment

Guided by the model in Section 3, we interpret residency as an institutional *membership rule* that shifts the effective user price of public inputs, p^{κ}, and thereby alters private choices. In the model's Cobb-Douglas aggregator, higher residency value $\bar{H}$ (via insider status) lowers p^{κ} and raises utilisation κ^{*}; through complementarity in utility this increases the marginal payoff to private outlays, while higher social endowment S scales human capital $h(S, H)$ and hence the expenditure budget. Therefore, Proposition 1 predicts that private consumption should be higher for insiders and for individuals with greater social endowment, conditional on wages; Proposition 3 implies we should control for wages because $\bar{H}$ and w substitute along indifference curves.

We implement this mapping with OLS models of (log) monthly consumption on residency indicators and social-endowment proxies, conditioning on own wages and standard demographics. To respect institutional timing, we use two blocks of residency indicators: a *current (2018)* block (local BSG *Hukou*; agricultural account) and a *previous/origin* block (born in BSG; agricultural account pre-24 July 2014). The former captures contemporaneous membership pricing, the latter separates baseline endowments from attained status around the 2014 reform (Section 2). Social endowment S is proxied by parental party status, schooling, and wages. Full specifications appear in Appendix Table C.1: Panel A uses current residency; Panel B uses previous/origin; within each, column (1) includes the full parental block and Column (2) retains only those explanatory variables that are statistically significant in column (1) (at conventional levels); among the parental covariates, only the father's (log) wage meets this criterion.

The results align with the institutional mechanism: current insider status (local BSG *Hukou*) is positively associated with consumption, while current agricultural hukou is negatively associated, both at conventional significance levels. In the previous residency block (panel B), being born in BSG is small and indistinct once controls enter, but *pre-reform* agricultural status is negative and

well determined. Among endowment proxies, father's wage is a robust positive predictor across all variants, while other parental attributes attenuate when own characteristics are included. Own wage is strongly positive (budget channel); men show lower reported consumption, reflecting gender differences in the composition of nondurable goods. Marriage is positive (household scale/needs), and age exhibits the usual concavity. Table 2 summarises signs and significance.

Two interpretive points follow. First, the insider-outsider contrast is exactly what Proposition 1 implies when membership lowers p^{κ}: insiders face cheaper, more reliable public inputs, so κ^* rises and—given the aggregator—private outlays move with it.[4] Second, the attenuation of parental proxies once own wage and residency are included is consistent with the model's separation: social endowment scales $h(S, H)$, while current membership prices the gateway; conditioning on w is essential because $\bar{H}$ and w trade off (Proposition 3). We emphasise that the cross-sectional design supports *institutionally anchored associations* rather than causal claims; nevertheless, the pattern across the two timing blocks (current vs. pre-2014/origin) reinforce the institutional reading.

Table 2: Consumption vs. residency and endowment—compact sign and significance

	A. Current residency		**B. Previous residency**	
	(1) Full	(2) Parsimonious	(3) Full	(4) Parsimonious
BSG *Hukou* (current)	$+^{*}$	$+^{*}$	—	—
Agricultural *Hukou* (current)	$-^{**}$	$-^{***}$	—	—
Originally from BSG	—	—	ns	—
Agric. *Hukou* (pre-reform)	—	—	$-^{**}$	$-^{***}$
Father's wage (log)	$+^{*}$	$+^{***}$	$+^{*}$	$+^{***}$
Own wage (log)	$+^{***}$	$+^{***}$	$+^{***}$	$+^{***}$
Male	$-^{***}$	$-^{***}$	$-^{***}$	$-^{***}$
Age	$-^{***}$	$-^{***}$	$-^{***}$	$-^{***}$
Age^2	$+^{***}$	$+^{***}$	$+^{***}$	$+^{***}$
Married	$+^{**}$	$+^{**}$	$+^{**}$	$+^{***}$
Education (respondent)	ns	—	ns	—

Notes: Signs and conventional significance are summarized from Appendix Table C.1. 'ns' denotes not significant at 10%; '—' indicates the covariate is not included in that specification.

5.2 Expenditure and subsidies on public goods, residency, and social endowment

We read expenditure and transfer outcomes through the institutional lens of Section 3: *Hukou* is a *membership rule* that sets a membership-contingent user price p^{κ} and allocates queue priority at gateways. When insider status lowers p^{κ}, the model implies higher optimal utilisation κ^* and, via complementarity in utility, higher private outlays in membership-linked domains (Proposition 1). Because residency value $\bar{H}$ substitutes for wages along indifference curves (Proposition 3), all specifications condition on own wages.

We estimate OLS models for the logs of out-of-pocket expenditure on housing, health, and children's education. Each outcome is regressed on residency indicators—*current* (2018) status (BSG local *Hukou*; agricultural *Hukou*) and, separately, *previous/origin* measures (born in BSG;

[4]Formally, in (5), higher $h(S, H)$ and lower p^{κ} raise the optimal *public* use κ^*; with utility shares fixed, the induced income/price effects raise optimal c^* as in Proposition 1.

agricultural *Hukou* pre-24 July 2014)—together with parental endowment proxies (party status, schooling, wages), demographics, and outcome-specific controls (tenure dummies and family size for housing; family size and a serious-illness indicator for health; number of children for education). Education-expenditure regressions are restricted to households with children. Full results are reported in Appendix Table C.2 (Panel A: current; Panel B: previous/origin). We then analyse *realised transfers* (housing subsidy, medical reimbursement, education subsidy) with the same covariates and domain controls (Appendix Table C.3).

Three expenditure regularities accord with Proposition 1. First, current insider status is strongly positive for *health* spending and marginally positive for *education* in the parsimonious model, whereas *housing* is insignificant once residency/tenure categories are controlled. This is intuitive: insider status lowers the user price and improves reliability at health and schooling gateways, raising κ^* and inducing complementary private outlays. By contrast, housing is a durable with lumpy adjustment; observed cash outlays are largely dictated by eligibility and contract form (e.g., ownership vs. renting), most of which we do not observe and which residency likely proxies in part, leaving little residual role for insider status in our specification. Second, origin indicators behave predictably: being originally from BSG (local) is associated with higher *health* and *education* spending (significant only in the parsimonious specification), while *pre-reform* agricultural origin is associated with higher *health* outlays (and somewhat higher *housing* in the parsimonious model), consistent with weaker baseline entitlements necessitating costlier private adjustments. Third, among endowment proxies, father's wage robustly predicts higher spending across domains—reflecting $h(S, H)$ scaling of both budgets and navigational capacity. As expected, own wage is strongly positive; men spend less on housing (composition), marriage raises housing but lowers education outlays (intra-household reallocation), and the age profile is weakly concave. Domain controls also load sensibly: residency/tenure and family size strongly predict housing, the serious-illness indicator raises health spending, and the number of children raises education spending.

Transfer patterns are consistent with a *gateway-enforcement* mechanism. Where eligibility is verified at the point of use (medical claims), insider status raises reimbursements; where screening is ex ante (school admissions), residency mainly governs entry and, conditional on admission and controls, has little residual association with education subsidies. Current insider status increases *medical* reimbursements; current agricultural status reduces *housing* subsidies (parsimonious model); and *pre-reform* agricultural origin is associated with higher medical reimbursements —consistent with differential programme rules or greater realised need among historically disadvantaged registrants. Parental endowments behave plausibly: father' s CCP membership and wage raise medical reimbursements, and mother' s wage predicts higher education subsidies. Own wage is strongly positive across transfer outcomes (wage-linked formulae and contributory designs), men receive less housing subsidy, and longer city duration raises medical reimbursements. Need proxies are mixed: family size increases medical reimbursements, whereas the serious-illness indicator and the number of children are not systematically related once other controls are included.

Table 3 summarises signs and significance. Taken together, the patterns align with Section 3's price-verification logic. Insider status lowers the effective user price p^{κ} and raises utilisation in

congestible, flow-intensive domains—most visibly in health. Where verification occurs at the point of use (medical claims), reimbursements are status-responsive; where screening is *ex ante* (school admissions), residency mainly governs entry and, conditional on admission and controls, education subsidies are comparatively flat. Housing's durability and contracting imply lumpy adjustment and slow pass-through, muting short-run residency effects. Endowments behave as expected: own wage loads positively across transfers (wage-linked/contributory designs), father' s wage and CCP membership raise medical reimbursements via $h(S, H)$ (budget scale and navigational capacity), and mother' s wage predicts higher education subsidies. We interpret these as *institutionally anchored associations* rather than causal effects; their persistence across current and origin (pre-reform) blocks reinforces the institutional reading while acknowledging possible selection and unobservables.

Table 3: Residency and endowment—expenditures and subsidies (sign and significance; Full vs. Parsimonious)

Panel A. Out-of-pocket expenditures (log)			
	Housing	Health	Education
BSG *Hukou* (current)	$\text{ns}^{\text{Fns/P—}}$	$+^{\text{F***/P**}}$	$+^{\text{F*/Pns}}$
Agricultural *Hukou* (current)	$\text{ns}^{\text{Fns/P—}}$	$\text{ns}^{\text{Fns/P—}}$	$\text{ns}^{\text{F—/P—}}$
Originally from BSG	$+^{\text{Fns/P—}}$	$+^{\text{Fns/P**}}$	$+^{\text{Fns/P*}}$
Agric. *Hukou* (pre-reform)	$+^{\text{Fns/P*}}$	$+^{\text{F***/P***}}$	$\text{ns}^{\text{Fns/P—}}$
Father's wage (log)	$+^{\text{F*/P***}}$	$+^{\text{Fns/P***}}$	$+^{\text{F***/Pns}}$
Own wage (log)	$+^{\text{F***/P***}}$	$+^{\text{F***/P**}}$	$+^{\text{F***/P***}}$
Male	$-^{\text{Fns/P*}}$	$\text{ns}^{\text{Fns/P—}}$	$\text{ns}^{\text{F—/Pns}}$
Married	$+^{\text{F***/P**}}$	$\text{ns}^{\text{Fns/P—}}$	$-^{\text{F***/P**}}$
Duration in city	$-^{\text{F**/P**}}$	$+^{\text{F***/P***}}$	$+^{\text{F**/P**}}$
Family size	$+^{\text{F*/P**}}$	$+^{\text{F***/P***}}$	—
Serious illness (last year)	—	$+^{\text{F**/P**}}$	—
Number of children	—	—	$+^{\text{F*/P**}}$
Panel B. Subsidies/Reimbursements (log)			
	Housing subsidy	Medical reimb.	Education subsidy
BSG *Hukou* (current)	$\text{ns}^{\text{Fns/P—}}$	$+^{\text{F**/P**}}$	$\text{ns}^{\text{Fns/P—}}$
Agricultural *Hukou* (current)	$-^{\text{Fns/P*}}$	$\text{ns}^{\text{Fns/P—}}$	$\text{ns}^{\text{Fns/P—}}$
Originally from BSG	$\text{ns}^{\text{Fns/P—}}$	$\text{ns}^{\text{Fns/P—}}$	$\text{ns}^{\text{Fns/P—}}$
Agric. *Hukou* (pre-reform)	$\text{ns}^{\text{Fns/P—}}$	$+^{\text{F**/P*}}$	$\text{ns}^{\text{Fns/P—}}$
Father's CPC	$\text{ns}^{\text{Fns/P—}}$	$+^{\text{Fns/P***}}$	$\text{ns}^{\text{Fns/P—}}$
Father's wage (log)	$+^{\text{Fns/P***}}$	$+^{\text{Fns/P**}}$	$\text{ns}^{\text{Fns/P—}}$
Mother's wage (log)	$\text{ns}^{\text{Fns/P—}}$	$\text{ns}^{\text{Fns/P—}}$	$+^{\text{Fns/P***}}$
Own wage (log)	$+^{\text{F***/P***}}$	$+^{\text{F***/P***}}$	$+^{\text{Fns/P*}}$
Male	$-^{\text{F**/P—}}$	$\text{ns}^{\text{Fns/P—}}$	$\text{ns}^{\text{Fns/P—}}$
Duration in city	$\text{ns}^{\text{Fns/P—}}$	$+^{\text{Fns/P*}}$	$\text{ns}^{\text{Fns/P—}}$
Family size	$\text{ns}^{\text{Fns/P—}}$	$+^{\text{F***/P***}}$	—

Notes: Signs report the common direction when consistent across models. Superscripts use the code $^{\text{F}\cdot/\text{P}\cdot}$, where $^{\text{F}\cdot}$ denotes the *Full* specification and $^{\text{P}\cdot}$ denotes the *Parsimonious* specification; levels are '***', '**', '*', or 'ns'. '—' indicates the covariate is not included in that specification. Entries summarise Appendix Tables C.2 and C.3.

5.3 Levels of satisfaction on public goods, value of residency, and social endowment

Following Section 3, we interpret reported satisfaction as a revealed evaluation of the *membership rule*. Insider status lowers the user price p^{κ} and improves queue priority at gateways; higher social endowment S scales human capital $h(S, H)$ and the ability to navigate those gateways. Proposition 2 therefore predicts higher satisfaction in domains where residency value $\bar{H}$ is greater (insiders) and where S is larger, while Proposition 3 implies conditioning on wages given the wage-residency trade-off. We estimate ordered-probit models for overall life satisfaction and for domain satisfaction in housing, healthcare, and children's education, including residency indicators (current insider vs. agricultural accounts), social-endowment proxies, city dummies, and standard controls (wages, demographics, subjective health, duration).

Descriptively (Table C.4), non-locals report lower *overall*, *housing*, and *education* satisfaction; the slightly higher mean *health* satisfaction amongst non-locals reflects composition (younger, healthier cohorts by subjective and objective measures[5]). In the multivariate results (Appendix Table C.5), current (2018) local *Hukou* is strongly positive for *housing* satisfaction and positive for *education*; after controls, it is also positive for *overall* life satisfaction. Current agricultural *Hukou* is negative across domains—particularly for housing and health—consistent with higher user prices and weaker priority at congestible gateways. City dummies indicate higher housing satisfaction in Shanghai and Guangzhou relative to Beijing, consistent with *tighter purchase curbs in Beijing in 2017 – 2018*[6]. Covariates follow established well-being patterns: own wages and marriage are positive; the age profile is U-shaped; subjective health is strongly positive; duration in city raises housing satisfaction and is modestly negative for health, consistent with adaptation and need effects.

Turning to social endowment (Appendix Table C.6), the estimates support Proposition 2. Parental political capital (father's CCP membership) predicts higher *overall*, *housing*, and *health* satisfaction. Parental earnings are domain specific: father's wage is associated with higher *overall* and *housing* satisfaction, while mother's wage predicts higher *education* satisfaction. Occupational-status proxies line up with domain content: a senior father relates to higher *health* satisfaction; a senior mother to higher *housing* and *education* satisfaction. Subjective health is positive across all models, as expected.

Table 4 summarises signs and significance. The pattern maps tightly to the model. First, residency results match the membership pricing schedule: insiders face lower p^{κ} and greater reliability, raising satisfaction in capacity-constrained services (housing, schooling) and, after controls, in overall life satisfaction; outsider (agricultural) status is the mirror image. Second, the endowment results are consistent with S operating as institutional capability: higher S scales $h(S, H)$ and improves navigation of gateways, with the largest effects where congestion and excludability are strongest. Because the design is cross-sectional, we read these as *institutionally*

[5]Migrants (without a BSG megacity *Hukou*) are younger on average (28.64 years vs. 33.67 for BSG locals), report better self-rated health (3.82 vs. 3.78), and were less likely to have had a serious illness visit in the past year (16.04% vs. 19.97%).

[6]In March – April 2017 Beijing tightened housing curbs by (i) raising the minimum down payment on second homes to 60% and applying second-home status based on prior mortgage records, and (ii) classifying newly divorced applicants as second-home buyers; see People's Daily Online (2017); Xinhua News Agency (2017).

anchored associations rather than causal effects; their persistence across specifications and domains, together with the role of city dummies as proxies for $\bar{H}$, reinforces the institutional interpretation.

Table 4: Residency and social endowment vs. satisfaction (sign and significance, by specification)

	SatOverall	SatHousing	SatHealth	SatEdu
A. Residency (Appendix Table C.5; B=(1,4,7,10), F=(2,5,8,11), P=(3,6,9,12))				
BSG *Hukou* (current)	$+^{\text{Bns/Fns/P**}}$	$+^{\text{B***/Fns/P—}}$	$-^{\text{Bns/Fns/P—}}$	$+^{\text{B*/Fns/P**}}$
Agric. *Hukou* (current)	$-^{\text{B**/Fns/P—}}$	$-^{\text{B***/F**/P***}}$	$-^{\text{B***/F***/P***}}$	$-^{\text{Bns/Fns/P—}}$
B. Social endowment (Appendix Table C.6; B=(1,4,7,10), F=(2,5,8,11), P=(3,6,9,12))				
Father's CCP (indicator)	$+^{\text{B**/F**/P**}}$	$+^{\text{B**/F**/P**}}$	$+^{\text{B**/F*/P***}}$	$-^{\text{Bns/Fns/P—}}$
Father's wage (log)	$+^{\text{Bns/F*/P**}}$	$+^{\text{B*/Fns/P***}}$	$+^{\text{Bns/Fns/P—}}$	$+^{\text{Bns/Fns/P—}}$
Mother's wage (log)	$+^{\text{Bns/Fns/P—}}$	$+^{\text{B*/Fns/P***}}$	$+^{\text{Bns/Fns/P—}}$	$+^{\text{Bns/Fns/P**}}$
Senior father	$+^{\text{Bns/Fns/Pns}}$	$+^{\text{Bns/Fns/P—}}$	$+^{\text{B*/F*/P***}}$	$+^{\text{Bns/Fns/P—}}$
Senior mother	$+^{\text{Bns/Fns/P—}}$	$+^{\text{B*/F**/P***}}$	$-^{\text{Bns/Fns/P—}}$	$+^{\text{Bns/Fns/P**}}$
C. Key controls (direction; typical significance across specs)				
Own wage (log)	$+^{***}$	$+^{**}$	$+^{**/***}$	$+^{***}$
Marriage	$+^{***}$	$+^{***}$	$+^{***}$	$+^{**}$
Age / Age^2	$-^{**}/+^{**}$	$-^{*}/+$	$-^{**}/+^{**}$	$-^{**}/+^{**}$
Subjective health	$+^{***}$	$+^{***}$	$+^{***}$	$+^{***}$

Notes: The superscript code $^{\text{B/F/P}}$ reports significance by specification: Baseline (B), Full controls (F), Parsimonious (P). Values are $***, **, *, ns.$ $^{-}$ indicates the covariate is not included in that specification. Signs (+, −) reflect the common sign across B/F/P when consistent; if signs differ across specs, only significance is shown.

5.4 Trade-offs between megacity residency, wages, and sector technology

We test Propositions 3–5 by exploiting variation in membership status, migrant cohorts, and sector technology. In the model, residency value $\bar{H}$—an institutional *membership* attribute—substitutes for wages along indifference curves (Proposition 3). Sector technology A_s scales both private purchasing power and the payoff to membership at gateways, magnifying the value of insider status where access is rationed (Propositions 4–5). Accordingly, we estimate ordered probits for *overall life satisfaction* across three cohorts with different expected $\bar{H}$: the full sample, those without a BSG local *Hukou*, and those not originally from BSG. We report a baseline block and a block that adds parental endowment proxies (Table C.7). If $\bar{H}$ partly substitutes for w, the wage coefficient should attenuate in migrant subsamples once endowments are included, and weaker membership (current agricultural status) should be negatively signed in baseline specifications that condition on wages and demographics.

The results match this mechanism. The wage coefficient is largest and most precisely estimated in the full sample; it weakens and becomes imprecise in the two migrant cohorts once endowment proxies are added—consistent with $\bar{H}$ substituting for w in overall utility (Proposition 3). Current (2018) agricultural *Hukou* is negative in baseline models, indicating lower utility for weaker membership even conditional on wages and demographics, which is the mirror image of the insider pricing schedule. These patterns are exactly what the model predicts when membership lowers p^{κ} and improves reliability at congestible gateways (Section 3).

Turning to sector technology, Proposition 4 predicts that higher A_s strengthens the link between membership and access to technology-intensive jobs. A probit for employment in

high-technology sectors (scientific research, IT, related services) shows that *naturalised* migrants are more likely to be employed in high-technology work (Appendix Table C.8). Proposition 5 links A_s to utility via income and job satisfaction: in ordered probits, the high-technology indicator is small and imprecise in the full sample but positive and significant for the two migrant cohorts (Appendix Table C.9). This asymmetry is precisely the model's amplification channel: higher A_s raises purchasing power and the realised (or expected) payoff to membership for non-locals facing binding gateways, whereas for insiders the marginal gain is muted.

Table 5 summarises signs and significance. We emphasise two points of interpretation. First, the wage attenuation among migrants once endowments enter is consistent with a residency-wage substitution rather than mere income effects; conditioning on wages is essential because the model's indifference loci trade $\bar{H}$ against w. Second, the technology results align with an institutional complementarity: A_s scales both the demand for publicly provided inputs and the returns to securing insider status (through conversion or employer sponsorship).

Table 5: Residency-wage and sector-technology trade-offs (sign and significance)

Panel A. Overall life satisfaction (ordered probit, SatOverall)			
	Entire	No BSG *Hukou*	Not orig. BSG
Baseline (Appendix Table C.7, cols. 1-3)			
log wage	$+^{***}$	$+^{*}$	$+^{**}$
agricultural *Hukou* (current)	$-^{*}$	$-^{*}$	$-^{*}$
+ Endowment proxies (Appendix Table C.7, cols. 4-6)			
log wage	$+^{**}$	ns	ns
agricultural *Hukou* (current)	ns	ns	ns
Panel B. Sector technology and utility			
	Entire	No BSG *Hukou*	Not orig. BSG
High-tech employment probit (Appendix Table C.8)			
naturalized migrants → high-tech job	—	$+^{**}$	$+^{**}$
Ordered probit (Appendix Table C.9)			
High-tech sector → income satisfaction	ns	$+^{*}$	$+^{**}$
High-tech sector → overall job satisfaction	ns	$+^{*}$	$+^{**}$

Notes: $+^{***}/+^{**}/+^{*}$ = positive at 1/5/10%; $-^{***}/-^{**}/-^{*}$ = negative; ns = $p \geq 0.10$; '—' = covariate not included. Signs and significance are summarised from Appendix Tables C.7, C.8, and C.9.

6 Discussion

The evidence is most naturally read through an institutional lens: *Hukou* operates as a *membership rule* that prices and rations quasi-club local services (Section 3). Our contribution is to bring that structure into measurement by pairing *private outlays* with *realised transfers* at the very gateways where eligibility is verified, and by linking both to reported satisfaction. This delivers an economics of residency-based pricing: who pays which *user price* p^{κ}, who receives which inflows at enforcement nodes, and how these margins aggregate into revealed welfare.

First, what the estimates say about the institution. Insider status (local BSG *Hukou*) is associated with higher private outlays in domains where lower p^{κ} plausibly raises utilisation—most sharply in health—together with higher satisfaction in congestible services (housing, education) and, conditional on controls, higher overall life satisfaction. Outsider status—captured most

starkly by agricultural accounts (current or pre-reform)—is correlated with less favourable expenditure profiles, lower transfers, and lower satisfaction. Transfers locate incidence at the gateway: insiders receive larger routine medical reimbursements, while education subsidies are comparatively insensitive to residency—suggesting tighter front-end rationing in school admissions than in routine health reimbursement. The prominence of own wages in subsidy outcomes is consistent with wage-linked programme formulas; the role of father's wage across spending and transfers matches the scaling channel in $h(S, H)$.

Secondly, how the mechanisms line up with the model. The Proposition 1 predicts that the reduction of p^{κ} for insiders raises κ^* and, through complementarity, induces higher private expenditures; our health and (marginally) education estimates follow this logic. Proposition 2 predicts higher satisfaction where $\bar{H}$ and S are larger; insider status and parental endowments are positive in the expected domains. Proposition 3 predicts a residency-wage trade-off; the attenuation of the wage coefficient in migrant subsamples once endowments are included is exactly that substitution. Propositions 4-5 predict technology-membership complementarity; high-technology sectors are more salient for naturalised migrants and raise income/job satisfaction among non-locals, consistent with A_s scaling the payoff to membership where gateways bind. In short, the signs and domains of our associations are the ones a pricing-and-gateways model implies.

Third, the economics contribution relative to the literature. The Tiebout tradition treats jurisdictions as bundles of taxes and services; our results supply the *pricing and enforcement technology* that makes those bundles bite. We show how membership-based wedges at specific gateways (health reimbursement, school admissions, housing support) translate into private adjustments, realised transfers, and revealed welfare—an institutional micro-foundation for sorting and incidence. By distinguishing *current* vs. *pre-reform/origin* status, and by reading parental endowments as S, we separate baseline eligibility, attained membership, and capability to navigate gateways—clarifying channels often conflated in cross-sectional work.

Fourth, external validity and generalisability. The mechanisms we study are not uniquely Chinese. Many jurisdictions ration congestible local inputs by administrative membership or domicile—school catchments and in-state tuition; public housing lists and residence permits; locality-tied health reimbursement. Under *international* migration, these rationing rules are typically layered with additional barriers that confound identification: migrants may face formal exclusions from 'public funds' (e.g., social assistance, housing allowances), sponsor- or employer-tied visas and work-authorisation constraints, waiting periods before eligibility for social insurance and family benefits, international-student tuition schedules, and limited healthcare coverage outside emergencies, alongside language and credential-recognition frictions. Where portability is limited, insiders face lower effective user prices and greater priority; outsiders face rationing or pay more. What makes China analytically valuable is that these cross-border frictions are absent: movers are citizens who share language, curricula, and the legal system, so the membership rule is observed *within a single polity*. The result is a large-scale social experiment in residency-based pricing with unusually sharp identification of membership and gateway mechanisms—even if the welfare costs fall on citizens who remain outsiders in their own cities.

Fifth, policy incidence. In model terms, insiders face a lower user price p^{κ}_{in} than outsiders p^{κ}_{out},

and also shorter queues; the relevant *wedge* is $W^\kappa = (p^\kappa_{\text{out}} - p^\kappa_{\text{in}}) + \nu\Delta t$, where $\nu\Delta t$ monetises extra waiting/processing. Three implications follow. *Pricing:* shrinking Δp^κ (e.g., harmonised reimbursement rates, insider-rate settlement for qualified outsiders) compresses insider-outsider gaps in utilisation and satisfaction by raising κ^* and, via complementarity, private outlays c^*. *Implementation:* portability and lighter, real-time verification reduce $\nu\Delta t$ at gateways (notably in routine health reimbursement), aligning formal entitlement with realised inflows. *Conversion:* where sector technology A_s is high, targeted, transparent conversion (points/employer-sponsored) yields the largest welfare gains by raising $\bar{H}$ for productive migrants and easing the residency-wage trade-off. In practice, pricing and portability should proceed with basic capacity safeguards and person-based fiscal clearing so that equalisation does not simply shift congestion or strain local budgets.

Finally, scope and identification. We purposefully interpret the coefficients as *institutionally anchored associations*. A cross-section, self-reported economic quantities, and a binary technology indicator limit causal claims, and selection into cities, sectors, and conversion routes may bias levels. We mitigate these concerns by (i) separating current and pre-reform/origin status to distinguish baseline eligibility from attained membership; (ii) conditioning on wages in light of the $\bar{H}$-w substitution; and (iii) reading transfers at gateways as revealed enforcement. We therefore refrain from causal language and interpret the estimates as conditional associations disciplined by the institutional framework in Section 3.

In sum, the patterns we document are consistent with a residency-based pricing institution: insider status lowers user prices and improves queue priority at gateways, social endowments scale capacity to navigate those gateways, and technology intensifies the payoff to membership. Read through this lens, our estimates are best viewed as *institutionally anchored associations* that clarify margins for policy design—pricing, portability, and targeted conversion—while preserving fiscal discipline.

7 Conclusion

In the language of institutional economics, megacities operate as clubs: rules define membership, membership prices access, and enforcement at gateways rations congestible services. We formalise this structure for China's *Hukou*—a *membership rule* with a pricing schedule for public inputs and a conversion technology—and bring it to data on spending, realised transfers, and satisfaction in three megacities. Four facts emerge. First, membership lowers user prices and raises utilisation: insiders exhibit higher health spending and higher satisfaction in congestible services, while agricultural status—especially pre-reform—predicts costlier private adjustments and lower satisfaction. Second, transfers locate incidence at the gateway: insiders receive larger routine medical reimbursements, whereas education subsidies are comparatively flat to residency, revealing heterogeneity in verification and rationing. Third, residency and wages trade off in utility: the wage coefficient attenuates among migrants once endowments are included, consistent with residency value substituting for wages along indifference curves. Fourth, technology complements membership: naturalised migrants are more likely to work in high-technology sectors, and high-technology employment raises income and job satisfaction among non-locals.

Two policy implications follow directly from the model. Lowering insider-outsider *price wedges* (or making eligibility *portable* at the point of use) should narrow gaps in utilisation and realised transfers without universally expanding nominal entitlements. *Targeted conversion*—transparent, skill-linked pathways—should deliver the largest welfare gains where sector technology is high, consistent with the complementarity between A_s and residency value.

Crucially, the mechanism generalises beyond China. In federations and free-movement areas, many services are de facto club goods: in-district school entitlements and in-state tuition; municipal housing lists and residence permits; locality-tied health reimbursement. Where eligibility is enforced at gateways, insiders face lower effective prices and more reliable access; outsiders face rationing or higher user prices. Framed in our terms, these settings share the same primitives—*membership rule*, *pricing schedule*, and *conversion technology*—and yield the same predictions: higher utilisation and satisfaction for members, a residency-wage trade-off, and stronger payoffs to membership in high-technology sectors. China's value is to strip away cross-border confounds (language, credential recognition, visa insecurity), offering a sharp within-polity test of residency-based pricing; but the institutional logic is common.

This perspective also nests core results in the migration literature. In the Tiebout tradition, jurisdictions are bundles of taxes and services; our pricing schedule provides the micro mechanism that produces sorting (Tiebout, 1956). Earnings expectations and public-service quality jointly shape location choice (Bayoh et al., 2006; Kennan and Walker, 2011); our estimates show that residency value can substitute for wages along indifference curves, reconciling wage- and amenity-based motives. Distributional impacts align with work on the financing and excludability of local public goods (Borjas, 2015; Schultz and Sjöström, 2001), while the portability of benefits across jurisdictions affects both incidence and mobility (Holzmann, 2018). Finally, our 'conversion technology' maps naturally to evidence on earnings gains from citizenship outside China (Hainmueller et al., 2019).

Methodologically, pairing out-of-pocket outlays with *realised* transfers at gateways and domain-level satisfaction provides a replicable template for studying membership institutions wherever local services are congestible and selectively excludable. Read through this lens, our results are best viewed as *institutionally anchored associations* that clarify margins for policy design—pricing, portability, and targeted conversion—while preserving fiscal discipline.

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A Proofs

Institutional roadmap. We interpret the primitives in the proofs through an *institutional economics* lens. The *Hukou* rule supplies (i) a *membership variable* $m_i \in \{0,1\}$ (local vs. non-local), (ii) a *pricing schedule* for public inputs $p^{\kappa}_{i,t} = p^{\kappa}_{\text{in},t}$ if m_i=1 and $p^{\kappa}_{i,t} = p^{\kappa}_{\text{out},t}$ if m_i=0 with $p^{\kappa}_{\text{in},t} < p^{\kappa}_{\text{out},t}$, and (iii) a *conversion technology* that governs transitions in m_i (discussed elsewhere). In the proofs below, p^{κ} carries the entire membership/pricing effect; the complementary slackness term encodes whether additional rationing (e.g., hard quotas) would bind.

A.1 Proofs of (4) and (5)

Migrant i maximizes (1) subject to (2) and (3). The current-value Hamiltonian is

$$\mathcal{H} = e^{-\rho v}\Big(\sum_{j=1}^{n} c_{i,j,v}\Big)^{\sigma}\big[\Gamma(\kappa_{i,v},\bar{H})\big]^{1-\sigma} + \lambda_1\, e^{-\rho v}\left((1-\tau_{I_i})w_{i,v}h_{j,v} - \sum_{j=1}^{n} p^{c}_{j,v}c_{i,j,v} - p^{\kappa}_{v}\kappa_{i,v}\right) + \lambda_2\, e^{-\rho v}\big(\dot{\kappa}_{i,v} + \delta\kappa_{i,v} - \tau_{I_i}w_{i,v}h_{j,v}\big), \tag{A.1}$$

where $e^{-\rho v}\dot{\kappa}_{i,v}\,dv = \frac{d}{dv}(e^{-\rho v}\kappa_{i,v}) + \rho e^{-\rho v}\kappa_{i,v}$.

The first-order conditions w.r.t. $c_{i,j,t}$ and $\kappa_{i,t}$ are

$$\sigma\, c_{i,j,t}^{\sigma-1}\,\big[\Gamma(\kappa_{i,t},\bar{H})\big]^{1-\sigma} = \lambda_1\, p^{c}_{j,t}, \tag{A.2}$$

$$(1-\sigma)\Big(\sum_{j=1}^{n} c_{i,j,t}\Big)^{\sigma}\big[\Gamma(\kappa_{i,t},\bar{H})\big]^{-\sigma}\Gamma_{\kappa} = \lambda_1\, p^{\kappa}_{t} + (\rho+\delta)\lambda_2, \tag{A.3}$$

where $\Gamma_{\kappa} = \partial\Gamma(\kappa_{i,t},\bar{H})/\partial\kappa_{i,t}$ and define the elasticity

$$\varepsilon_{\kappa_i\Gamma_i} \;=\; \frac{\kappa_{i,t}}{\Gamma}\,\Gamma_{\kappa} \;\geq 0.$$

The Kuhn-Tucker condition for (3) is

$$\lambda_2\big(\dot{\kappa}_{i,t} + \delta\kappa_{i,t} - \tau_{I_i}w_{i,t}h_{j,t}\big) = 0, \qquad \dot{\kappa}_{i,t} + \delta\kappa_{i,t} \geq \tau_{I_i}w_{i,t}h_{j,t}.$$

At an interior solution the constraint is slack and $\lambda_2 = 0$. Substituting into (A.3) gives

$$(1-\sigma)\Big(\sum_{j=1}^{n} c_{i,j,t}\Big)^{\sigma}\big[\Gamma(\kappa_{i,t},\bar{H})\big]^{-\sigma}\Gamma_{\kappa} = \lambda_1 p^{\kappa}_{t}. \tag{A.4}$$

Dividing (A.2) by (A.4) and rearranging yields

$$c^{*}_{i,j,t} \;=\; \frac{\sigma\, p^{\kappa}_{t}\,\kappa_{i,t}}{p^{c}_{j,t}\,(1-\sigma)\,\varepsilon_{\kappa_i\Gamma_i}}.$$

Plug this into the budget constraint (2) to solve for $\kappa_{i,t}^*$:

$$(1-\tau_{I_i})w_{i,t}h_{j,t} = \sum_{j=1}^{n} p_{j,t}^c \frac{\sigma p_t^\kappa \kappa_{i,t}}{p_{j,t}^c(1-\sigma)\varepsilon_{\kappa_i\Gamma_i}} + p_t^\kappa \kappa_{i,t} = \frac{\sigma n}{(1-\sigma)\varepsilon_{\kappa_i\Gamma_i}} p_t^\kappa \kappa_{i,t} + p_t^\kappa \kappa_{i,t},$$

which simplifies (absorbing n into the common denominator term used in the main text) to

$$\kappa_{i,t}^* \;=\; \frac{(1-\sigma)\,\varepsilon_{\kappa_i\Gamma_i}\,(1-\tau_{I_i})\,w_{i,t}\,h_{j,t}}{p_t^\kappa\big[(1-\sigma)\varepsilon_{\kappa_i\Gamma_i}+\sigma\big]},$$

which is (4). Substituting $\kappa_{i,t}^*$ back into $c_{i,j,t}^*$ yields

$$c_{i,j,t}^* \;=\; \frac{\sigma(1-\tau_{I_i})\,w_{i,t}\,h_{j,t}}{p_{j,t}^c\,\big[(1-\sigma)\varepsilon_{\kappa_i\Gamma_i}+\sigma\big]},$$

which is (5). □

Institutional corollary (membership ↑ ⇒ user price ↓ ⇒ utilization ↑). From (4), holding $\varepsilon_{\kappa_i\Gamma_i}$ fixed,

$$\frac{\partial \kappa_{i,t}^*}{\partial p_{i,t}^\kappa} = -\,\frac{(1-\sigma)\,\varepsilon_{\kappa_i\Gamma_i}\,(1-\tau_{I_i})\,w_{i,t}\,h_{j,t}}{\big[(1-\sigma)\varepsilon_{\kappa_i\Gamma_i}+\sigma\big]\,(p_{i,t}^\kappa)^2} \;<\; 0.$$

Since membership $m_i{=}1$ implies $p_{i,t}^\kappa{=}p_{\text{in},t}^\kappa < p_{\text{out},t}^\kappa$, insiders have $\kappa_{i,t}^*$ strictly higher than outsiders. Because $\Gamma_\kappa \geq 0$, higher $\kappa_{i,t}^*$ raises $\Gamma(\kappa_{i,t}^*, \bar{H})$ and hence u_i^* in (7). If $\varepsilon_{\kappa_i\Gamma_i}$ is weakly increasing in κ (e.g., Γ log-concave), the comparative static strengthens.

A.2 Proof of Proposition 3

From (7),

$$u_i^* = \Big(\sum_{j=1}^{n} c_{i,j}^*\Big)^\sigma \Big[\Gamma(\kappa_i^*, \bar{H})\Big]^{1-\sigma}.$$

Totally differentiate along an indifference locus ($\mathrm{d}u_i^* = 0$) with respect to w and $\bar{H}$:

$$\begin{aligned}\Big\{\sigma\big(\textstyle\sum_j c_j^*\big)^{\sigma-1}\Gamma^{1-\sigma}\,\frac{\mathrm{d}c^*}{\mathrm{d}w} + (1-\sigma)\big(\textstyle\sum_j c_j^*\big)^{\sigma}\Gamma^{-\sigma}\Gamma_\kappa\,\frac{\mathrm{d}\kappa^*}{\mathrm{d}w}\Big\}\,\mathrm{d}w \\ + (1-\sigma)\big(\textstyle\sum_j c_j^*\big)^{\sigma}\Gamma^{-\sigma}\Gamma_\kappa\,\frac{\partial\kappa^*}{\partial\bar{H}}\,\mathrm{d}\bar{H} = 0.\end{aligned}$$

Hence

$$\frac{\mathrm{d}w}{\mathrm{d}\bar{H}} = -\frac{(1-\sigma)\big(\sum_j c_j^*\big)^{\sigma}\Gamma^{-\sigma}\Gamma_\kappa\,\partial\kappa^*/\partial\bar{H}}{\sigma\big(\sum_j c_j^*\big)^{\sigma-1}\Gamma^{1-\sigma}\,\mathrm{d}c^*/\mathrm{d}w + (1-\sigma)\big(\sum_j c_j^*\big)^{\sigma}\Gamma^{-\sigma}\Gamma_\kappa\,\mathrm{d}\kappa^*/\mathrm{d}w} \;<\; 0, \tag{A.5}$$

since $\Gamma_\kappa \geq 0$, $\partial\kappa^*/\partial\bar{H} \geq 0$, and the denominator is positive by the optimality conditions. Therefore, along an indifference curve, higher residency value $\bar{H}$ is traded off against a lower wage w, proving Proposition 3. □

Institutional reading. Equation (A.5) formalizes the *wage-membership substitution*: increases in residency value $\bar{H}$—which summarize the membership rule (lower p^κ and better

queues)—permit a compensating reduction in w along a fixed-utility locus. This is the revealed-preference version of a membership institution acting like an in-kind transfer that lowers the user price of local public inputs.

Optional extension: hard rationing. If one augments the problem with a capacity constraint $\kappa_{i,t} \leq \bar{\kappa}_t(m_i)$ that is tighter for outsiders, an additional Lagrange multiplier $\mu_{i,t} \geq 0$ enters the κ first-order condition. When binding for outsiders, $\mu_{i,t} > 0$ generates an extra wedge (a scarcity rent) in addition to p^{κ}, making the wage-membership substitution in (A.5) even stronger, and aligning with the empirical outsider-insider satisfaction gaps in congestible domains.

B Data, context, and measurement

Institutional lens for geography and measurement. Throughout this appendix we interpret geography and measurement through an *institutional economics* lens. The *Hukou* regime provides (i) a *membership rule* (local vs. non-local), (ii) a *pricing schedule* for public inputs that depends on membership (user price p^{κ}), and (iii) *enforcement gateways* (school admissions, medical reimbursement, housing programs) together with *conversion pathways* (employer sponsorship/points). The regional context motivates cross-city variations in the *club value* of services, and the coding choices map survey variables to these primitives.

B.1 Regional context

Our study focuses on Beijing, Shanghai, and Guangzhou—three megacities that anchor China's principal coastal economic regions and host concentrated clusters of tradable services and advanced manufacturing. Beijing sits at the core of the Bohai Economic Rim, encompassing Tianjin and surrounding provinces (NDRC, 2015); Shanghai is embedded within the Yangtze River Delta, spanning southern Jiangsu, northern Zhejiang, and parts of Anhui (NDRC, 2016); and Guangzhou lies within the Pearl River Delta, proximate to the earliest Special Economic Zones in Shenzhen and Zhuhai (established in 1980). Figure B.1 situates the three study areas within China and provides geographic context for the subsequent analysis.

Institutional geography. The three megacities also differ along institutional margins that matter for our model: the *membership benefit* $\bar{H}$ (scope/quality of local services), the *enforcement intensity* at gateways, and the *conversion technology* (employer/points routes). We do not use policy shocks here; instead, city fixed differences serve as cross-sectional proxies for the locality-specific club value and enforcement environment that shape p^{κ} and access reliability.

B.2 Variable definitions and descriptive statistics

This appendix details how each variable used in the analysis is defined and coded, reports full-sample descriptive statistics, and summarizes implementation and data-quality checks. The goal is to keep measurement transparent whilst sustaining the main text focused on identification and results. Table B.1 summarizes the core measures and their coding conventions, and Table B.2 provides comprehensive descriptives (observations, means, standard deviations, and ranges) for all variables in the dataset.

Institutional coding map. The map survey constructs to institutional primitives as follows. The *membership rule* is captured by **BSG_hukou** (local=1) as an insider indicator, while **agri_hk_current** marks account types correlated with outsider disadvantages. *Conversion/baseline eligibility* is proxied by **local** (born in BSG) and **agri_hk_pre_reform** (pre-2014), which encode baseline endowments and conversion histories that shape current membership. *Enforcement gateways* are observed directly via **housing_subsidy**, **medical_insurance** (reimbursement), and **edu_subsidy**—variables measured at the points where eligibility is verified—providing transfer-side measures of the realized user price. *Club value and usage*

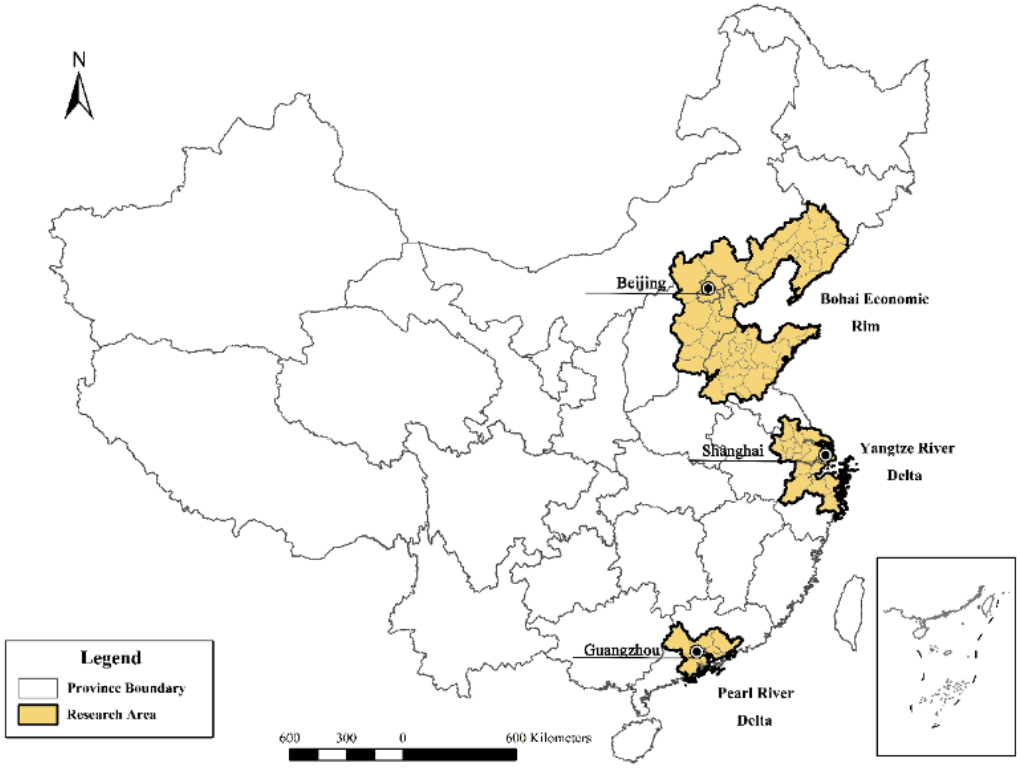

Figure B.1: Study areas: Beijing, Shanghai, and Guangzhou within China.

are captured by domain satisfaction (**SatHousing**, **SatHealth**, **SatEdu**) together with out-of-pocket outlays (**housing_cost**, **health_cost**, **edu_cost**), which reflect perceived quality and private adjustments at congestible gateways. Finally, *social endowment* S is proxied through parental CCP membership, wages, senior roles, and schooling, representing institutional capacity to accumulate $h(S, H)$ and to navigate membership and gateways. Taken together, these codings allow us to read coefficients as *institutionally anchored associations* along a membership-contingent price schedule p^{κ}, rather than as purely mechanical income effects.

Construct validity note. Our insider/outsider proxies measure *administrative membership* rather than de facto residence; transfer variables reflect payments conditional on gateway verification; and domain satisfaction reflects perceived quality/priority in congestible services. This alignment is what lets the survey speak directly to the institutional primitives used in the model.

B.3 Implementation and data quality

The survey was administered on the WJX platform in late 2018. Recruitment followed city-level quotas of at least 500 completed interviews in each of Beijing, Shanghai, and Guangzhou, yielding a non-probability cross-section rather than a population-representative sample. To limit misreporting of location, we validated submissions against IP geo-location at time of completion and replaced records that failed this check or omitted core fields (date of birth, gender, education, or satisfaction outcomes) to meet city targets. All responses were anonymous and access to

Table B.1: Descriptions of key variables

Variable	Description
	Satisfaction
SatOverall	Overall life satisfaction (1-5)
SatHealth	Satisfaction with medical care (1-5)
SatHousing	Satisfaction with housing (1-5)
SatEdu	Satisfaction with children's education (1-5)
SatJobOverall	Overall job satisfaction (1-5)
SatIncome	Satisfaction with income (1-5)
Health_subjective	Subjective health score (1-5)
	Consumption, expenditures, subsidies
consumption	Average personal monthly expenditure on nondurables & services (RMB)
housing_cost	Average monthly accommodation expenditure (RMB)
housing_subsidy	Average monthly housing subsidy (RMB)
health_cost	Average monthly healthcare expenditure (RMB)
medical_insurance	Average monthly reimbursement by medical insurance (RMB)
edu_cost	Average monthly expenditure on children's education (RMB)
edu_subsidy	Average monthly subsidy on children's education (RMB)
	Social endowment
cpc_father, **cpc_mother**	Parent is CCP member (1/0)
w_father, **w_mother**	Parent average monthly wage (RMB; logged in regressions)
senior_father, **senior_mother**	Parent held senior managerial/professional role (1/0)
edu_father, **edu_mother**	Parent education (1-6)
	Personal attributes
w	Respondent average monthly wage (RMB)
male	1 = male, 0 = female
age	Age at end-2018 (years)
cpc	Respondent is a CCP member (1/0)
eth	Ethnic minority (1) / Han (0)
marr	Married (1/0)
edu	Education (1-6)
health_objective	Visited doctor for serious issue last year (1/0)
dur	Years in current city (BSG)
num_child	Number of children
fz	Family size (excluding respondent)
	Residency and Hukou
property_owner_full	Own home, no mortgage (1/0)
property_owner_mort	Own home, with mortgage (1/0)
rented_accom	Renting (1/0)
local	Originally from BSG (1/0)
agri_hk_pre_reform	Agricultural *Hukou* before 2014 'Opinions' (1/0)
BSG_hukou	Holds BSG local *Hukou* (1/0)
agri_hk_current	Currently agricultural *Hukou* (1/0)

Notes: '1/0' indicates binary indicators. Scales use end-2018 RMB; satisfaction is on a 1-5 Likert scale.

the raw data was restricted to the research team; sensitive items were optional. Unless noted otherwise in the main text, analyses use listwise deletion by outcome.

Institutional measurement posture. Two design choices mirror the institution we study. First, IP-based location validation reflects *place-based* eligibility checks at gateways. Second, city quotas ensure the variation in *membership capital* (insider shares, conversion opportunities) required to identify associations along the membership-contingent price wedge.

Threats to validity and interpretation. Because the sample is non-probability, external validity is limited; however, our interpretation is within-sample and *institutionally anchored*.

Table B.2: Descriptive statistics of key variables

Variable	Obs.	Mean	SD	Min	Max
Satisfaction					
SatOverall	1557	3.6525	0.8412	1	5
SatHealth	1550	3.5535	0.9605	1	5
SatHousing	1549	3.3602	1.0252	1	5
SatEdu	911	3.6246	0.9479	1	5
SatJobOverall	1557	3.5119	0.8952	1	5
SatIncome	1549	3.2963	0.9997	1	5
Health_subjective	1565	3.8013	0.8144	1	5
Consumption, expenditures, subsidies					
consumption	1353	9397.06	13784.85	0	379308.8
housing_cost	1563	2381.54	2533.23	0	30000
housing_subsidy	1563	542.24	1039.47	0	12000
health_cost	1563	773.80	1303.30	0	25000
medical_insurance	1564	473.10	920.70	0	19500
edu_cost	953	1292.43	4765.28	0	120000
edu_subsidy	953	198.68	559.85	0	5300
Social endowment					
cpc_father	1565	0.3521	0.4778	0	1
cpc_mother	1565	0.1342	0.3410	0	1
w_father	1565	9361.56	21825.92	0	500000
w_mother	1565	5537.92	8827.43	0	180000
senior_father	1565	0.2466	0.4312	0	1
senior_mother	1565	0.0901	0.2864	0	1
edu_father	1565	2.2971	1.0825	1	6
edu_mother	1565	2.0013	1.0095	1	6
Personal attributes					
w	1565	9505.04	11790.87	0	250000
male	1565	0.5016	0.5002	0	1
age	1565	30.06	7.1314	16.083	65.5
cpc	1565	0.3016	0.4591	0	1
eth	1565	0.0121	0.1095	0	1
marr	1565	0.5489	0.4978	0	1
edu	1565	3.8927	0.7355	1	6
health_objective	1565	0.1789	0.3834	0	1
dur	1565	15.819	13.132	0.333	65.5
num_child	1565	0.7955	0.7796	0	6
fz	1563	1.8983	1.4607	0	23
Residency and Hukou					
property_owner_full	1565	0.3623	0.4808	0	1
property_owner_mort	1565	0.3054	0.4607	0	1
rented_accom	1565	0.2626	0.4402	0	1
local	1565	0.3297	0.4703	0	1
agri_hk_pre_reform	1565	0.3904	0.4880	0	1
BSG_hukou	1565	0.4703	0.4993	0	1
agri_hk_current	1565	0.2645	0.4412	0	1

Coefficients are read as associations conditioned on wages, demographics, and area dummies; mapping variations in membership and conversion history to differences in user prices, transfers, and satisfaction. Potential biases (e.g., selective survey participation among insiders/outsiders) would, at most, threaten level estimates rather than the sign patterns we emphasize.

Generalizability across institutional settings. The measurement framework—membership indicators, gateway-verified transfers, domain-specific satisfaction, and endowment proxies—can be transferred to other contexts where local services are rationed by administrative membership or legal status (e.g., school catchments, public housing eligibility, municipal residency rules). The same mapping to institutional primitives (membership rule, pricing schedule, enforcement gateways) applies.

C Extended Tables

This appendix compiles the full coefficient matrices underlying the main-text results, including OLS models for consumption, public-good expenditures, and subsidies; ordered-probit specifications for overall and domain satisfaction (with current vs. origin residency, augmented and parsimonious variants, and cohort splits); and the high-technology employment and satisfaction regressions. The tables are labeled for cross-reference, report t-statistics in parentheses with conventional significance markers, and mirror the institutional splits (current vs. previous residency,endowment controls) used throughout the article.

Table C.1: Ordinary least squares regression of log consumption on value of residency and social endowment

	A. Current residency		**B. Previous residency**	
	(1) log_con	(2) log_con	(3) log_con	(4) log_con
BSG_hukou	0.0700*	0.0669*		
	(1.78)	(1.73)		
agri_hk_current	−0.123**	−0.127***		
	(−2.48)	(−2.67)		
local			0.0585	
			(1.33)	
agri_hk_pre_reform			−0.111**	−0.118***
			(−2.52)	(−2.91)
cpc_father	0.0134		0.0165	
	(0.31)		(0.38)	
cpc_mother	−0.00140		0.0000139	
	(−0.02)		(0.00)	
log_w_father	0.0800*	0.133***	0.0796*	0.141***
	(1.87)	(4.22)	(1.86)	(4.42)
log_w_mother	0.0645		0.0653	
	(1.40)		(1.41)	
senior_father	0.0746		0.0746	
	(1.43)		(1.43)	
senior_mother	0.00199		0.00422	
	(0.03)		(0.06)	
edu_father	−0.0293		−0.0265	
	(−1.14)		(−1.03)	
edu_mother	−0.00412		−0.00200	
	(−0.14)		(−0.07)	
log_w	0.493***	0.500***	0.494***	0.500***
	(10.73)	(12.10)	(10.66)	(12.08)
male	−0.126***	−0.125***	−0.120***	−0.123***
	(−3.35)	(−3.38)	(−3.18)	(−3.30)
age	−0.0564***	−0.0534***	−0.0569***	−0.0519***
	(−3.30)	(−3.18)	(−3.35)	(−3.09)
age^2	0.000757***	0.000719***	0.000764***	0.000707***
	(3.37)	(3.28)	(3.46)	(3.25)
cpc	−0.0433		−0.0268	
	(−1.05)		(−0.65)	
eth	−0.287		−0.294	
	(−1.08)		(−1.12)	
marr	0.134**	0.132**	0.133**	0.135***
	(2.49)	(2.53)	(2.48)	(2.59)
edu	0.0298		0.0334	
	(0.92)		(1.02)	
N	1298	1334	1298	1334
AIC	2577.2	2659.8	2579.7	2663.9

Notes: OLS regressions of log consumption (`log_con`). t-statistics in parentheses. Significance levels: $^{*}p < 0.10$, $^{**}p < 0.05$, $^{***}p < 0.01$.

Table C.2: Ordinary least squares regression of log expenditure on public goods vs. residency dummies and social endowment proxies

Variable	A. Current residency						B. Previous residency					
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
	log_housing_cost		log_health_cost		log_edu_cost		log_housing_cost		log_health_cost		log_edu_cost	
BSG_hukou	0.0552		0.245***	0.230***	0.192*	0.110						
	(0.86)		(3.31)	(3.37)	(1.90)	(1.00)						
agri_hk_current	0.0218		0.102				-0.128					
	(0.40)		(1.46)				(-1.16)					
local							-0.0582		0.129	0.167**	0.153	0.204*
							(-0.80)		(1.61)	(2.20)	(1.27)	(1.72)
agri_hk_pre_reform							0.0701	0.0874*	0.202***	0.195***	-0.0576	
							(1.43)	(1.90)	(3.31)	(3.44)	(-0.60)	
cpc_father	-0.00473		0.0755	0.0953*	-0.236**	-0.254***	-0.00701		0.0798	0.121**	-0.245***	-0.231**
	(-0.09)		(1.16)	(1.66)	(-2.42)	(-2.87)	(-0.13)		(1.22)	(2.08)	(-2.75)	(-2.36)
cpc_mother	-0.0139		0.0843		0.195		0.243**	-0.0155		0.0608		0.194
	(-0.18)		(0.93)		(1.64)		(2.00)	(-0.20)		(0.66)		(1.52)
												0.247**
												(2.00)
log_w_father	0.0791*	0.111***	0.0885	0.101***	0.203***	0.112	0.0757*	0.111***	0.0752	0.104***	0.110	0.203***
	(1.74)	(3.35)	(1.61)	(3.13)	(3.93)	(1.28)	(1.67)	(3.40)	(1.38)	(3.20)	(1.57)	(4.01)
log_w_mother	0.00935		-0.0202		0.117			0.0156		-0.00794		0.122
	(0.20)		(-0.31)		(1.25)			(0.34)		(-0.13)		(1.55)
senior_father	0.0248		0.00988		-0.104			0.0268		0.0230		-0.102
	(0.38)		(0.14)		(-0.99)			(0.41)		(0.32)		(-0.97)
senior_mother	0.108		-0.000135			0.246*	0.106		-0.00610		0.259*	0.270**
	(1.10)		(-0.00)			(1.74)	(1.08)		(-0.05)		(1.67)	(2.00)
						0.243*						
						(1.79)						
edu_father	-0.000202		-0.00162		0.0143			0.00702		0.0149		0.0168
	(-0.01)		(-0.05)		(0.25)			(0.23)		(0.43)		(0.31)
edu_mother	-0.00165		0.0350		-0.00195			0.0000174		0.0432		0.00115
	(-0.05)		(0.88)		(-0.03)			(0.00)		(1.09)		(0.02)

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Variable	A. Current residency						B. Previous residency					
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
	log_housing_cost		log_health_cost		log_edu_cost		log_housing_cost		log_health_cost		log_edu_cost	
log_w	0.310***	0.296***	0.157***	0.118**	0.238***	0.252***	0.303***	0.301***	0.155***	0.153***	0.255***	0.243***
	(6.53)	(6.65)	(2.79)	(2.57)	(2.80)	(3.45)	(6.40)	(6.74)	(2.75)	(3.28)	(2.66)	(2.88)
male	-0.0688	-0.0798*	0.0384		-0.118		-0.0715	-0.0815*	0.0425		-0.109	
	(-1.50)	(-1.77)	(0.70)		(-1.41)		(-1.56)	(-1.81)	(0.78)		(-1.26)	
age	-0.0245		-0.0322		-0.0207			-0.0198		-0.0261		-0.0240
	(-0.95)		(-1.12)		(-0.42)			(-0.78)		(-0.90)		(-0.49)
age^2	0.000263		0.000368		0.000239			0.000196		0.000301		0.000298
	(0.72)		(0.92)		(0.36)			(0.54)		(0.74)		(0.46)
cpc	0.0552		0.0952	0.106*	0.0540		0.0489		0.0965	0.121**	0.0654	
	(1.12)		(1.55)	(1.78)	(0.58)		(1.01)		(1.58)	(2.06)	(0.74)	
eth	-0.0695		-0.324		-0.0659			-0.0676		-0.302		-0.0393
	(-0.21)		(-1.40)		(-0.15)			(-0.20)		(-1.31)		(-0.07)
marr	0.170***	0.128**	0.0164		-0.410***	-0.361**	0.168**	0.136**	0.00319		-0.337**	-0.403***
	(2.60)	(2.37)	(0.22)		(-3.21)	(-2.18)	(2.57)	(2.50)	(0.04)		(-2.02)	(-3.14)
edu	0.119***	0.131***	-0.0108		0.178***	0.148**	0.129***	0.141***	0.0183		0.157**	0.188***
	(3.60)	(4.23)	(-0.25)		(2.84)	(2.30)	(3.97)	(4.52)	(0.43)		(2.36)	(3.00)
dur	-0.00608**	-0.00561**	0.00794***	0.00685***	0.00867**	0.0105**	-0.00306	-0.00481**	0.0115***	0.0102***	0.00937*	0.00825*
	(-2.06)	(-2.57)	(2.65)	(2.64)	(2.21)	(2.43)	(-1.03)	(-2.18)	(3.52)	(3.61)	(1.86)	(1.77)
property_owner_mort	0.750***	0.743***					0.752***	0.749***				
	(12.57)	(12.62)					(12.61)	(12.71)				
rented_accom	0.484***	0.455***					0.470***	0.451***				
	(8.04)	(7.70)					(7.78)	(7.64)				
fz	0.0341*	0.0410**	0.0790***	0.0755***			0.0329*	0.0384**	0.0829***	0.0768***		
	(1.72)	(2.13)	(3.48)	(3.63)			(1.65)	(1.98)	(3.65)	(3.70)		
health_objective			0.161**	0.161**					0.167**	0.164**		
			(2.23)	(2.30)					(2.32)	(2.34)		
num_child					0.163*	0.191**					0.191**	0.167*
					(1.83)	(2.47)					(2.10)	(1.84)
N	1284	1315	1469	1508	629	612	1284	1315	1469	1508	612	629

(table continues on next page)

Variable	A. Current residency						B. Previous residency					
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
	log_housing_cost		log_health_cost		log_edu_cost		log_housing_cost		log_health_cost		log_edu_cost	
AIC	3047.4	3112.9	4211.7	4300.4	1776.4	1728.2	3045.4	3111.5	4210.8	4298.0	1728.5	1776.0

Notes: Coefficients with t statistics in parentheses. Superscripts: * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Table C.3: Ordinary least squares regression of log subsidy/reimbursement on residency dummies and social endowment proxies

Variable	A. Current residency						B. Previous residency					
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
	log_housing_subsidy		log_health_subsidy		log_edu_subsidy		log_housing_subsidy		log_health_subsidy		log_edu_subsidy	
BSG_hukou	-0.00811		0.162**	0.177**	0.0591							
	(-0.08)		(2.04)	(2.41)	(0.32)							
agri_hk_current	0.0458	-0.136*	0.0666		-0.173							
	(0.56)	(-1.78)	(0.84)		(-0.96)							
local							-0.122		0.0374		0.149	
							(-1.19)		(0.44)		(0.74)	
agri_hk_pre_reform							-0.0524		0.157**	0.118*	-0.190	
							(-0.69)		(2.29)	(1.86)	(-1.12)	
cpc_father	-0.0469		0.0953	0.182***	-0.0605		-0.0591		0.0980	0.198***	-0.0604	
	(-0.54)		(1.28)	(2.94)	(-0.35)		(-0.69)		(1.31)	(3.15)	(-0.35)	
cpc_mother	0.00327		0.0908		0.0186		0.0218		0.0733		0.0293	
	(0.03)		(0.88)		(0.11)		(0.20)		(0.69)		(0.16)	
log_w_father	0.0983	0.135***	0.0517	0.0744**	0.174		0.104	0.134***	0.0437	0.0816**	0.180	
	(1.35)	(2.63)	(0.82)	(1.97)	(0.80)		(1.41)	(2.65)	(0.69)	(2.18)	(0.84)	
log_w_mother	0.00747		0.0256		0.0762	0.243***	-0.00158		0.0341		0.0732	0.243***
	(0.09)		(0.41)		(0.35)	(3.45)	(-0.02)		(0.54)		(0.34)	(3.45)
senior_father	-0.0299		0.0442		-0.140		-0.0401		0.0521		-0.148	
	(-0.31)		(0.52)		(-0.80)		(-0.41)		(0.62)		(-0.81)	
senior_mother	0.0745		-0.146		0.0760		0.0833		-0.147		0.0973	
	(0.49)		(-1.17)		(0.32)		(0.55)		(-1.16)		(0.39)	
edu_father	0.0241		0.0161		0.0249		0.0199		0.0291		0.0206	
	(0.50)		(0.42)		(0.23)		(0.41)		(0.75)		(0.19)	
edu_mother	0.0216		0.0359		0.109		0.0187		0.0430		0.118	
	(0.41)		(0.79)		(1.02)		(0.35)		(0.95)		(1.12)	
log_w	0.402***	0.546***	0.234***	0.296***	0.170	0.187*	0.396***	0.451***	0.228***	0.308***	0.175	0.187*
	(4.77)	(7.40)	(3.83)	(5.90)	(0.99)	(1.73)	(4.67)	(5.34)	(3.72)	(6.07)	(1.03)	(1.73)
male	-0.163**		0.0669		-0.0957		-0.165**	-0.171**	0.0678		-0.0686	
	(-2.26)		(1.08)		(-0.63)		(-2.27)	(-2.35)	(1.10)		(-0.44)	

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Variable	A. Current residency						B. Previous residency					
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
	log_housing_subsidy		log_health_subsidy		log_edu_subsidy		log_housing_subsidy		log_health_subsidy		log_edu_subsidy	
age	0.0169		-0.00399		-0.00829		0.0139	0.0682**	0.00280	-0.00990		
	(0.47)		(-0.13)		(-0.07)		(0.39)	(2.02)	(0.09)	(-0.09)		
age^2	-0.000245		0.0000805		0.000548		-0.000232	-0.000861*	-0.00000674		0.000559	
	(-0.46)		(0.20)		(0.34)		(-0.44)	(-1.71)	(-0.02)		(0.33)	
cpc	0.0548		0.0908		0.318*	0.323**	0.0560		0.0889		0.332**	0.323**
	(0.74)		(1.31)		(1.89)	(2.19)	(0.76)		(1.29)		(2.00)	(2.19)
eth	-0.242		-0.351		-0.418		-0.276		-0.331		-0.485	
	(-0.45)		(-1.40)		(-1.15)		(-0.52)		(-1.29)		(-1.33)	
marr	0.137		0.102		-0.265		0.140		0.0951		-0.252	
	(1.43)		(1.30)		(-0.84)		(1.46)		(1.21)		(-0.79)	
edu	0.122**		0.0335		-0.0563		0.114**	0.157***	0.0550		-0.0678	
	(2.21)		(0.70)		(-0.42)		(2.13)	(3.16)	(1.17)		(-0.52)	
dur	0.00142		0.00470	0.00555*	-0.00492		0.00353		0.00844**	0.0108***	-0.00776	
	(0.31)		(1.48)	(1.95)	(-0.68)		(0.80)		(2.47)	(4.55)	(-0.89)	
property_owner_mort	0.474***						0.469***					
	(5.56)						(5.52)					
rented_accom	0.00774						-0.000341					
	(0.08)						(-0.00)					
fz	0.000306		0.0927***	0.100***			0.000216		0.0941***	0.100***		
	(0.01)		(3.77)	(4.29)			(0.01)		(3.84)	(4.32)		
health_objective			0.0673						0.0710			
			(0.85)						(0.90)			
num_child					0.110						0.125	
					(0.75)						(0.84)	
N	682	693	1298	1326	235	235	682	693	1298	1326	235	235
AIC	1803.0	1867.7	3874.3	3934.2	735.1	712.6	1801.3	1852.2	3873.4	3936.3	733.9	712.6

Notes: Coefficients with t statistics in parentheses. Superscripts: * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Table C.4: Comparison of different aspects of satisfaction amongst sub-samples

Variables	**No. of obs.**	**Mean**	**SD**	**Min**	**Max**
Cohort with BSG local Hukou					
SatOverall	733	3.6958	0.8614	1	5
SatHealth	733	3.5498	0.9577	1	5
SatHousing	731	3.5417	0.9576	1	5
SatEdu	460	3.6913	0.9196	1	5
Health	736	3.7840	0.8368	1	5
Cohort without BSG local Hukou					
SatOverall	824	3.6141	0.8214	1	5
SatHealth	817	3.5569	0.9636	1	5
SatHousing	818	3.1980	1.0565	1	5
SatEdu	451	3.5565	0.9722	1	5
Health	829	3.8166	0.7941	1	5
Originally from BSG					
SatOverall	513	3.6881	0.8433	1	5
SatHealth	511	3.4990	0.9474	1	5
SatHousing	512	3.5664	0.9506	1	5
SatEdu	323	3.6656	0.9256	1	5
Health	516	3.7791	0.8300	1	5
Not originally from BSG					
SatOverall	1044	3.6351	0.8400	1	5
SatHealth	1039	3.5804	0.9662	1	5
SatHousing	1037	3.2584	1.0456	1	5
SatEdu	588	3.6020	0.9599	1	5
Health	1049	3.8122	0.8067	1	5

Table C.5: Ordered probit regression of satisfaction levels (utility) on the value of residency

Variable	SatOverall			SatHousing			SatHealth			SatEdu		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
BSG_hukou	0.0828	0.0691	0.141**	0.298***	0.122		−0.0897	−0.0659		0.128*	0.157	0.149**
	(1.40)	(0.90)	(2.49)	(5.13)	(1.61)		(-1.55)	(-0.93)		(1.67)	(1.59)	(2.08)
agri_hk_current	−0.131**	-0.110		−0.200***	−0.155**	−0.179***	−0.258***	−0.229***	−0.205***	-0.0772	-0.000123	
	(-1.97)	(-1.53)		(-3.04)	(-2.25)	(-2.66)	(-3.84)	(-3.21)	(-3.14)	(-0.88)	(-0.00)	
log_w		0.199***	0.193***		0.112**	0.0979**		0.120**	0.145***		0.219***	0.226***
		(3.63)	(3.77)		(2.25)	(1.99)		(2.36)	(3.04)		(3.53)	(3.93)
male		-0.0393		-0.0746		0.0229		0.0408				
		(-0.69)		(-1.35)		(0.42)		(0.55)				
age		−0.0791***	−0.0781***		−0.0661**	−0.0660**		−0.0815***	−0.0778**		−0.118***	−0.118***
		(-2.69)	(-2.70)		(-2.46)	(-2.43)		(-2.62)	(-2.55)		(-2.82)	(-2.87)
age^2		0.000831**	0.000857**		0.000593	0.000565		0.000911**	0.000826*		0.00148***	0.00147***
		(2.05)	(2.15)		(1.60)	(1.50)		(2.06)	(1.92)		(2.64)	(2.66)
cpc		0.111*			0.132**	0.135**		0.217***	0.220***		0.0462	
		(1.72)			(2.13)	(2.18)		(3.47)	(3.60)		(0.60)	
eth		-0.140			−0.484**	−0.477**		-0.120			-0.484	
		(-0.48)			(-2.43)	(-2.39)		(-0.56)			(-0.99)	
marr		0.248***	0.270***		0.227***	0.231***		0.212***	0.202***		0.321**	0.328**
		(3.28)	(3.61)		(3.15)	(3.20)		(2.80)	(2.68)		(2.40)	(2.45)
edu		-0.0536			0.0746*	0.0866**		0.0497			-0.00492	
		(-1.09)			(1.72)	(2.00)		(1.19)			(-0.10)	
dur		0.00276			0.0124***	0.0157***		-0.00190			-0.00108	
		(0.85)			(4.03)	(6.45)		(-0.64)			(-0.28)	
Shanghai_dum	0.107	0.0696		0.146**	0.126*	0.124*	0.0394	0.0290		0.0227	-0.0153	
	(1.58)	(1.00)		(2.22)	(1.87)	(1.85)	(0.59)	(0.43)		(0.25)	(-0.17)	
Guangzhou_dum	0.0368	0.0152		0.188***	0.189***	0.186***	-0.00627	-0.00501		0.114	0.113	0.125*
	(0.53)	(0.21)		(2.81)	(2.76)	(2.72)	(-0.10)	(-0.08)		(1.25)	(1.22)	(1.66)
Health		0.431***	0.429***		0.264***	0.264***		0.226***	0.228***		0.176***	0.172***
		(11.05)	(11.04)		(7.35)	(7.36)		(6.40)	(6.45)		(3.94)	(3.86)

(table continues on next page)

Variable	SatOverall			SatHousing			SatHealth			SatEdu		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
N	1557	1551	1551	1549	1543	1543	1550	1544	1544	911	907	907
AIC	3706.9	3512.0	3505.0	4320.7	4197.0	4197.3	4182.1	4086.7	4077.8	2438.8	2400.8	2389.3

Notes: Ordered probit estimates. t-statistics in parentheses. Superscripts: * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Table C.6: Ordered probit regression of satisfaction levels (utility) on social endowment

Variable	SatOverall			SatHousing			SatHealth			SatEdu		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
cpc_father	0.167**	0.166**	0.158**	0.167**	0.146**	0.153**	0.129**	0.116*	0.162***	-0.0374	-0.0542	
	(2.32)	(2.38)	(2.43)	(2.54)	(2.14)	(2.53)	(1.99)	(1.74)	(2.66)	(-0.43)	(-0.62)	
cpc_mother	-0.118	-0.0728		-0.0139	-0.0872		0.0914	0.0832		0.106	0.0683	
	(-1.18)	(-0.76)		(-0.16)	(-0.96)		(0.99)	(0.90)		(0.95)	(0.61)	
log_w_father	0.0523	0.0920*	0.0812**	0.0941*	0.0712	0.140***	0.0555	0.0135		0.0995	0.0323	
	(0.98)	(1.66)	(2.18)	(1.79)	(1.33)	(3.71)	(1.05)	(0.25)		(1.57)	(0.48)	
log_w_mother	0.0301	0.0927		0.110*	0.0364		0.0770	0.0618		0.0792	0.0800	0.115**
	(0.53)	(1.54)		(1.88)	(0.63)		(1.40)	(1.09)		(1.09)	(1.09)	(2.14)
senior_father	0.119	0.0922	0.122	0.0849	0.118		0.126*	0.131*	0.230***	0.136	0.144	
	(1.54)	(1.18)	(1.64)	(1.16)	(1.60)		(1.68)	(1.72)	(3.45)	(1.48)	(1.55)	
senior_mother	0.115	0.0704		0.190*	0.241**	0.286***	-0.0685	-0.0515		0.208	0.226	0.274**
	(0.96)	(0.61)		(1.69)	(2.13)	(2.82)	(-0.59)	(-0.43)		(1.40)	(1.51)	(1.97)
edu_father	0.00332	-0.00405		0.0411	0.0227		0.0273	0.0348		-0.00861	-0.0110	
	(0.08)	(-0.10)		(1.08)	(0.58)		(0.71)	(0.88)		(-0.17)	(-0.21)	
edu_mother	0.0470	0.0618	0.0608*	0.0164	-0.00711		0.0530	0.0489		0.0162	0.00461	
	(1.04)	(1.43)	(1.94)	(0.39)	(-0.16)		(1.27)	(1.13)		(0.30)	(0.08)	
log_w	0.126**		0.101*	0.0454			0.0584			0.154**	0.176***	
	(2.13)		(1.82)	(0.86)			(1.08)			(2.29)	(2.93)	
male	-0.0317			-0.0567			0.0276			0.0571		
	(-0.55)			(-1.01)			(0.50)			(0.75)		
age	-0.0706**		-0.0698**	-0.0521*	-0.0186***		-0.0658**	-0.0147***		-0.0999**	-0.101**	
	(-2.32)		(-2.36)	(-1.89)	(-3.50)		(-2.05)	(-3.00)		(-2.38)	(-2.45)	
age^2	0.000767*		0.000803**	0.000451	0.000780*		0.00122**	0.00124**				
	(1.84)		(1.97)	(1.20)	(1.72)		(2.20)	(2.25)				
cpc	0.0829			0.0979			0.146**	0.200***		0.0391		
	(1.27)			(1.50)			(2.26)	(3.25)		(0.48)		
eth	-0.177			-0.515**	-0.504**		-0.139			-0.562		
	(-0.63)			(-2.52)	(-2.45)		(-0.67)			(-1.15)		

(table continues on next page)

Variable	SatOverall			SatHousing			SatHealth			SatEdu		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
marr	0.250***		0.253***	0.228***	0.208***		0.203***	0.177**		0.346**	0.340**	
	(3.24)		(3.37)	(3.11)	(3.14)		(2.62)	(2.57)		(2.52)	(2.49)	
edu	-0.0572			0.0733*	0.0942**		0.0266			-0.0103		
	(-1.12)			(1.66)	(2.41)		(0.63)			(-0.19)		
dur	0.00286			0.0145***	0.0147***		-0.00536**			0.000590		
	(1.07)			(5.69)	(6.06)		(-2.07)			(0.19)		
health_subjective	0.429***		0.425***	0.253***	0.252***		0.212***	0.240***		0.163***	0.157***	
	(10.68)		(10.82)	(6.92)	(7.05)		(5.85)	(6.84)		(3.55)	(3.44)	
Shanghai_dum	0.0796			0.151**	0.139**		0.0593			0.00801		
	(1.10)			(2.20)	(2.07)		(0.85)			(0.09)		
Guangzhou_dum	0.00683			0.186***	0.189***		0.0266			0.112		
	(0.09)			(2.65)	(2.75)		(0.39)			(1.19)		
N	1498	1503	1537	1496	1491	1535	1496	1491	1550	881	878	880
AIC	3375.3	3535.7	3447.0	4140.7	4030.3	4152.3	4004.5	3944.2	4092.0	2347.8	2327.5	2314.4

Notes: Coefficients with t statistics in parentheses. Superscripts: * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Table C.7: Ordered probit regression of satisfaction levels (utility) amongst the entire sample, the cohort without BSG local *Hukou*, and the cohort not originally from BSG

Variable	**A. (1)-(3) Baseline**			**B. (4)-(6) + Endowment proxies**		
	(1) entire	(2) no BSG *Hukou*	(3) not orig. BSG	(4) entire	(5) no BSG *Hukou*	(6) not orig. BSG
agri_hk_current	-0.123*	-0.161*	-0.147*	-0.0669	-0.0952	-0.100
	(-1.75)	(-1.93)	(-1.86)	(-0.91)	(-1.09)	(-1.20)
health_subjective	0.430***	0.447***	0.401***	0.429***	0.450***	0.401***
	(11.04)	(7.75)	(8.17)	(10.69)	(7.61)	(7.83)
Shanghai_dum	0.0678	-0.0390	0.0244	0.0804	-0.0387	0.0353
	(0.97)	(-0.40)	(0.29)	(1.11)	(-0.38)	(0.40)
Guangzhou_dum	0.0142	-0.0472	-0.0401	0.00690	-0.0631	-0.0516
	(0.20)	(-0.47)	(-0.45)	(0.09)	(-0.61)	(-0.57)
cpc_father				0.165**	0.111	0.0962
				(2.28)	(1.11)	(1.09)
cpc_mother				-0.110	-0.380**	0.0158
				(-1.08)	(-2.20)	(0.10)
log_w_father				0.0537	0.0185	0.0726
				(1.00)	(0.25)	(1.07)
log_w_mother				0.0265	0.0278	0.00515
				(0.46)	(0.37)	(0.07)
senior_father				0.120	0.150	0.0548
				(1.55)	(1.31)	(0.57)
senior_mother				0.114	-0.0189	0.0876
				(0.95)	(-0.10)	(0.51)
edu_father				-0.000863	-0.0209	0.00122
				(-0.02)	(-0.37)	(0.02)
edu_mother				0.0443	0.104	0.0382
				(0.98)	(1.64)	(0.68)
log_w	0.197***	0.121*	0.164**	0.125**	0.0860	0.112
	(3.60)	(1.67)	(2.47)	(2.12)	(1.12)	(1.58)
male	-0.0378	-0.0578	-0.0699	-0.0312	-0.0399	-0.0478
	(-0.67)	(-0.73)	(-1.01)	(-0.54)	(-0.50)	(-0.68)
age	-0.0787***	-0.110**	-0.0630	-0.0736**	-0.114**	-0.0563
	(-2.67)	(-2.34)	(-1.47)	(-2.41)	(-2.39)	(-1.30)
age^2	0.000814**	0.00117*	0.000625	0.000800*	0.00125*	0.000580
	(2.01)	(1.70)	(1.00)	(1.91)	(1.81)	(0.93)
cpc	0.114*	0.157*	0.0433	0.0812	0.195**	0.0377
	(1.77)	(1.69)	(0.54)	(1.24)	(2.10)	(0.47)
eth	-0.142	0.0342	0.0810	-0.182	0.0109	0.0506
	(-0.49)	(0.07)	(0.22)	(-0.64)	(0.02)	(0.14)
marr	0.248***	0.305***	0.277***	0.251***	0.331***	0.294***
	(3.28)	(2.92)	(3.03)	(3.26)	(3.07)	(3.14)
edu	-0.0483	0.0176	-0.0449	-0.0626	0.00516	-0.0508
	(-0.99)	(0.27)	(-0.79)	(-1.22)	(0.08)	(-0.86)
dur	0.00454*	0.0150**	0.0122***	0.00247	0.0126**	0.00836*
	(1.81)	(2.50)	(2.81)	(0.91)	(2.04)	(1.86)
N	1551	821	1039	1498	785	997
AIC	3510.7	1824.5	2368.1	3376.5	1749.5	2280.2

Notes: Coefficients with t statistics in parentheses. Superscripts: * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Table C.8: Probit regression of being employed in the high-technology sector

	(1)	(2)	(3)	(4)
Dependent variable: high_tech_sec				
naturalized_migrants		0.268**	0.253**	0.244**
		(2.35)	(2.23)	(2.16)
agri_hk_current		0.188		
		(1.64)		
agri_hk_pre_reform			0.0983	
			(0.96)	
male	0.220**	0.208**	0.207**	0.207**
	(2.28)	(2.14)	(2.13)	(2.15)
age	0.0186	0.0317	0.0282	
	(0.41)	(0.69)	(0.61)	
age^2	-0.000392	-0.000549	-0.000509	
	(-0.61)	(-0.86)	(-0.79)	
cpc	0.218**	0.193*	0.180*	0.206**
	(2.17)	(1.92)	(1.81)	(2.07)
eth	0.290	0.279	0.276	
	(0.75)	(0.72)	(0.71)	
marr	0.191	0.189	0.187	
	(1.52)	(1.50)	(1.50)	
edu	0.250***	0.252***	0.244***	0.238***
	(2.99)	(3.02)	(2.92)	(2.91)
N	1565	1565	1565	1565
AIC	837.2	834.3	836.0	830.8

Notes: Probit estimates. t-statistics in parentheses. Significance: * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Table C.9: Ordered probit regressions of income satisfaction and overall job satisfaction by cohort

	SatIncome			**SatJobOverall**		
Variable	(1) entire	(2) no BSG *Hukou*	(3) not orig. BSG	(4) entire	(5) no BSG *Hukou*	(6) not orig. BSG
high_tech_sec	0.0507	0.283*	0.266**	0.171	0.314*	0.331**
	(0.48)	(1.71)	(2.23)	(1.51)	(1.90)	(2.37)
agri_hk_current	0.0366	0.0588	0.0568	-0.0255	0.0884	0.0141
	(0.52)	(0.73)	(0.73)	(-0.36)	(1.04)	(0.18)
health_subjective	0.277***	0.218***	0.246***	0.352***	0.342***	0.338***
	(7.78)	(4.21)	(5.49)	(9.81)	(6.49)	(7.56)
log_w	0.337***	0.346***	0.368***	0.232***	0.252***	0.258***
	(6.24)	(4.70)	(5.67)	(4.54)	(3.26)	(4.03)
male	0.0623	0.0776	0.0656	0.0770	0.0991	0.0727
	(1.13)	(1.03)	(0.98)	(1.39)	(1.29)	(1.07)
age	-0.0672**	-0.00916	-0.0270	-0.0710**	-0.0500	-0.0673*
	(-2.27)	(-0.22)	(-0.70)	(-2.45)	(-1.20)	(-1.75)
age^2	0.000769*	-0.000157	0.000157	0.000893**	0.000510	0.000864
	(1.86)	(-0.27)	(0.28)	(2.19)	(0.84)	(1.54)
cpc	0.190***	0.133	0.0755	0.152**	0.121	0.0732
	(3.12)	(1.50)	(0.99)	(2.38)	(1.30)	(0.90)
eth	0.0636	-0.00389	0.0968	-0.138	-0.198	-0.186
	(0.25)	(-0.01)	(0.32)	(-0.62)	(-0.59)	(-0.72)
marr	0.173**	0.145	0.154*	0.213***	0.226**	0.189**
	(2.33)	(1.45)	(1.72)	(2.85)	(2.23)	(2.13)
edu	0.00124	0.0783	0.0143	0.0000613	0.0766	0.0410
	(0.03)	(1.39)	(0.29)	(0.00)	(1.31)	(0.81)
dur	0.00484*	0.0172***	0.0113***	-0.000602	0.0100*	0.0104**
	(1.91)	(2.81)	(2.67)	(-0.24)	(1.80)	(2.35)
N	1544	819	1034	1551	822	1040
AIC	4122.3	2197.0	2772.4	3799.9	1999.4	2579.6

Notes: Coefficients with t statistics in parentheses. Superscripts: * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.