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When Demand Mixes and Matches with Supply: A Configurational Analysis of Nonprofit Sector Density in China

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Abstract: The nonprofit sector is a vital component of good governance, yet it remains unclear how different factors interact to shape its development. This study employs a fuzzy-set qualitative comparative analysis (fsQCA) method to examine how demand- and supply-side factors combine to influence nonprofit sector density across jurisdictions, using Chinese social service nonprofits as the empirical context. We identify three pathways to high nonprofit sector density and two pathways to low density, each involving a distinct combination of demand- and supply-side conditions. There is no singular formula for understanding nonprofit sector density; rather, it emerges from different mixes of these factors through various pathways. The findings unpack the causal complexity underlying nonprofit sector density by providing new evidence from a non-Western setting and offering fresh insight into how nonprofit theories operate in configuration.

Keywords: nonprofit sector density; government-nonprofit relations; qualitative comparative analysis; Chinese nonprofit sector

1 Introduction

Nonprofit organizations contribute significantly to good governance in multiple ways. They deliver services that enhance social welfare, engage in policy advocacy to strengthen political representation, and provide innovative solutions to emerging social challenges (Frumkin 2002). Over the past several decades, nonprofit sectors in many countries have expanded in size, sophistication, and influence (Salamon et al.

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2017; Toepler et al. 2020). Yet the distribution of nonprofit activity continues to vary considerably across jurisdictions, raising an enduring question: what factors shape nonprofit sector density, that is, the concentration of nonprofit organizations within a given geographic unit? Understanding these patterns is essential, as nonprofit density affects the accessibility of services, the strength of civic infrastructure, and the broader relationship between state and society. Higher nonprofit density can expand coverage, reduce service deserts, and improve responsiveness, while also shaping resource allocation, accountability, and the resilience of services during shocks (Grønbjerg and Paarlberg 2001; Joassart-Marcelli and Wolch 2003; Polson 2017).

To address this question, scholars have advanced several theoretical perspectives, including government failure, contract failure, interdependence, and entrepreneurship (e.g. Hansmann 1980; Rose-Ackerman 1996; Salamon 1995; Salamon et al. 2017; Weisbrod 1988). Building on these theories, researchers have examined nonprofit sectors in diverse countries and regions, identifying both demand-side and supply-side influences. Some studies stress the role of service demand in fostering nonprofit density, while others highlight the importance of supply-side conditions (e.g. Grønbjerg and Paarlberg 2001; Jeong and Cui 2020; Kim 2015; Liu 2017; Zuhlke 2022). Collectively, these studies offer important insights into the drivers of nonprofit sector density.

However, despite an impressive body of literature, existing knowledge of nonprofit sector density remains limited for three reasons. Theoretically, prior studies have rarely examined how demand- and supply-side theories intersect to explain nonprofit density, even though their complementarity is widely recognized. As Anheier (2005, p. 131) noted, "the various theories are complementary rather than rival, and, taken together, offer a convincing answer in terms of demand and supply conditions." Yet most research tests single theories or compares them in parallel, rather than analyzing how they work conjuncturally (e.g. Matsunaga and Yamauchi 2004; Lecy and Van Slyke 2013; Liu 2017).

Methodologically, much of the literature relies on regression analysis to estimate the marginal effects of *single* demand- or supply-side factors, focusing on additive relationships rather than on how factors operate in *configurations* (e.g. Jeong and Cui 2020; Kim and Kim 2018; Van Puyvelde and Brown 2016). Because nonprofit sector density is shaped by a mix of demand- and supply-side conditions, an emphasis on isolated factors provides only a partial account and obscures the underlying causal complexity.[1]

1 Most existing studies employ regression analysis to estimate the marginal effects of single demand- or supply-side factors on nonprofit sector density while holding other variables constant. For instance, Liu (2017) found that government support boosts density; Kim and Kim (2018) showed that

Empirically, findings remain inconsistent, with studies reaching different conclusions about the effects of similar factors. For instance, research on population heterogeneity yields mixed results: some report positive effects (e.g. Corbin 1999; Jeong and Cui 2020; Matsunaga et al. 2010), while others find null or negative relationships (e.g. Marchesini da Costa 2016; Grønbjerg and Paarlberg 2001; Marchesini da Costa 2016; Shon and Lu 2024; Van Puyvelde and Brown 2016). Such contradictions indicate that current evidence remains inconclusive in explaining the complex dynamics of nonprofit sector density.

These limitations motivate us to consider how demand- and supply-side factors combine to produce causal patterns, and how different configurations may lead to the same outcome. In this study, we address these gaps through a configurational analysis of the nonprofit sector in mainland China. Using fuzzy-set qualitative comparative analysis (fsQCA) with data from 31 provinces, we examine how demand- and supply-side factors jointly shape the density of social service nonprofits (i.e. private non-enterprise organizations).[2] Our results show that density is not determined by single factors in isolation but by distinct combinations of conditions operating through multiple pathways. The influence of any individual determinant is contingent on the presence or absence of others, and several alternative configurations lead to nonprofit sector density. This highlights the causal complexity of nonprofit development, where multiple roads can lead to similar outcomes.

Despite the exploratory nature of this analysis, our study contributes to the literature in three ways. First, it advances theory by showing that no single factor or theory is sufficient; multiple, complementary explanations are needed to account for nonprofit density. Second, it demonstrates how nonprofit theories can interact in varied configurations, moving beyond additive models to capture conjunctural causality. Third, it provides new empirical evidence from a non-Western context, extending comparative understanding of nonprofit sector development. In doing so, the study not only enriches knowledge of the Chinese nonprofit sector but also illustrates how configurational methods can deepen understanding of complex causal processes in nonprofit studies more broadly.

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nonprofit activities prevail in resourceful environments; and Jeong and Cui (2020) reported that population heterogeneity tends to increase density. However, these studies do not explain how different factors operate in combination. For example, how does nonprofit sector development unfold in a locality characterized by high population heterogeneity but limited government support and weak environmental resources?

2 In China, nonprofits are commonly classified into three categories according to registration status, organizational structure, and mission: associations, foundations, and private non-enterprise organizations. Private non-enterprise organizations are established by individuals or institutions with a primary focus on delivering direct social services.

2 Theoretical Framework

Following established practices, we view nonprofit sector density as jointly shaped by demand- and supply-side factors (Anheier 2005; Ben-Ner and Van Hoomissen 1991). In this study, we focus on three widely examined conditions: population heterogeneity (Weisbrod 1988), resource munificence (Ben-Ner and Van Hoomissen 1991; Zuhlke 2022), and government provision (Liu 2017; Salamon 1995). These factors capture key dimensions of demand and supply that influence nonprofit density. Moreover, they have been consistently employed and validated in prior research, ensuring that our analysis builds on a strong foundation of established scholarship.

2.1 Demand-Side Condition: Population Heterogeneity

Population heterogeneity is central to Weisbrod's (1988) government failure theory, which explains the existence of nonprofits in market economies. Weisbrod argues that nonprofits supply goods and services that governments fail to supply, given the tension between diverse demands and majority-based decision rules. In demographically heterogeneous societies, governments may struggle to meet varied needs for two reasons. First, they typically cater to sizable political constituencies, leaving some needs unmet. Second, public service levels are typically set by majority vote, which may not reflect all preferences. As a result, nonprofits fill these gaps, supported by voluntary action and charitable contributions from those with similar interests. As Weisbrod (1988, p. 27) noted, "if government responds to the demands of the majority and the nonprofit sector responds to the demands of the undersatisfied, then the greater the diversity of demand the larger the size of the nonprofit sector will be." Empirical studies support a positive association between population heterogeneity and nonprofit sector density (e.g. Dipendra 2019; Kim and Kim 2015; Lu 2020; Matsunaga and Yamauchi 2004; Polson 2017). In sum, jurisdictions with more diverse populations tend to exhibit higher nonprofit sector density.

2.2 Supply-Side Condition: Resource Munificence

While population heterogeneity explains the need for nonprofits, their formation also depends on the availability of resources in the organizational environment (Ben-Ner and Van Hoomissen 1991; Zuhlke 2022). We focus on resource munificence, which refers to the extent to which critical resources are accessible for organizational operation (Castrogiovanni 1991). Greater munificence increases an organization's likelihood of accessing needed inputs, and resource abundance or scarcity

strongly shapes survival and growth. Studies show that when resources are plentiful, organizations pursue broader strategies and innovate more (Brittain and Freeman 1980; Guan et al. 2025; Tang 2008), whereas when resources are scarce, they face severe constraints on survival and growth (Dess and Beard 1984; Hannan and Freeman 1977; Park et al. 2022). From a resource mobilization perspective, nonprofits must secure money, skills, and knowledge from their environments to emerge and endure (Jenkins 1983; McCarthy and Zald 1977). Nonprofits therefore tend to be most prevalent where financial (donations, program income), human, and technological resources are available. Empirical work shows nonprofits cluster in affluent areas to access such resources (e.g. Bielefeld et al. 1997; Grønbjerg and Paarlberg 2001; Lecy and Van Slyke 2013). Hence, jurisdictions with richer resource environments tend to exhibit higher nonprofit sector density.

2.3 Demand-/Supply-Side Condition: Government Service Provision

As governments and nonprofits become increasingly intertwined (Salamon 1995; Young 2000), the government's role in shaping nonprofit sector density warrants careful attention. We consider two conditions of government service provision: government expenditure and government fragmentation. The former represents the *level* of government provision, while the latter reflects its *diversity*. Each may influence both demand- and supply-side dynamics, underscoring the complexity of their relationships with nonprofit density.

For government expenditure's impact on nonprofit sector density, two perspectives yield competing expectations. On the demand side, government failure theory suggests that higher public provision can reduce unmet needs and thus lower nonprofit density (e.g. Matsunaga et al. 2010; Van Puyvelde and Brown 2016). Conversely, from a supply-side perspective, interdependence theory holds that governments and nonprofits are complementary, as governments often collaborate with and fund nonprofits to deliver public services (Salamon 1995). This implies a positive relationship between public service spending and nonprofit sector density, supported by evidence such as Kim and Kim (2018), Lecy and Van Slyke (2013), and Lu and Xu (2018). Combining demand- and supply-side analyses, the net impact of government spending on nonprofit sector density can move in either direction, depending on how these interactions balance. In other words, the relationship is complex and context-dependent, reflecting the tension between substitution and complementarity.

Government fragmentation refers to the proliferation of government units within a locality, vertically (tiers such as county and town) and horizontally (units

within a tier) (Boyne 1992). Fragmentation can enhance responsiveness via accountability and Tiebout-style competition, enabling residents to sort into jurisdictions that better match their service preferences and prompting governments to improve service quality (Schneider 1986; Tiebout 1956; Arikan 2004). However, its implications for nonprofit sector density are theoretically ambiguous, reflecting a balance between substitution and complementarity. On the demand side, if public providers better match heterogeneous preferences, fewer residual needs may remain for nonprofits (substitution). On the supply side, fragmented systems may multiply access points and diversify contracting opportunities, mobilizing nonprofits to meet varied needs (complementarity). Empirical evidence remains limited, though positive associations have been reported in the U.S. (Liu 2017; Jeong and Cui 2020).

Taken together, the discussions of population heterogeneity, resource munificence, and government provision (spending and fragmentation) indicate that some conditions show more consistent associations with nonprofit sector density than others, and that effects can vary across contexts. To examine whether and under what combinations these conditions align with higher or lower density, we adopt a configurational approach.

2.4 A Configurational Approach

We employ a configurational approach to explore the joint impacts of demand-side and supply-side conditions on nonprofit sector density (Fiss 2011; Meyer et al. 1993). This approach posits that specific outcomes result from the combination and interdependence of multiple factors. The effect of one factor may interact with others in producing an outcome, necessitating a holistic view of these conditions. Furthermore, the configurational approach highlights the causal complexity underlying outcomes, meaning that factors can combine in various ways to produce the same result.[3] Therefore, we must consider different causal pathways (i.e. different mixes of factors) leading to the same outcome. As Furnari et al. (2021, p. 797) summarized, "the focus lies on understanding how or why multiple attributes combine into distinct configurations to explain a phenomenon, while also recognizing that complex causal explanations may involve more than one configuration of attributes leading to the outcome of interest." From this perspective, it is insufficient to attribute the

3 QCA does not claim causality in the traditional statistical sense of isolating net effects. Instead, it identifies causal complexity by mapping patterns of necessary and sufficient conditions. This allows researchers to capture conjunctural causality (causes working in combination), equifinality (multiple pathways to the same outcome), and asymmetry (the causes of an outcome may differ from the causes of its absence).

complexity of nonprofit sector density to individual conditions; rather, nonprofit sector density is best understood as shaped by different mixes of multiple, interdependent conditions.

Figure 1 illustrates our theoretical framework using Venn diagrams. The largest circle represents nonprofit sector density in a jurisdiction, and the smaller circles represent contributing factors. Based on prior studies, the "+" sign indicates a positive impact of an individual condition, the "–" sign indicates a negative impact, and the "+/–" sign indicates cases where the direction is unclear. We posit that the impact of demand-side factors on nonprofit sector density is contingent on supply-side factors. This configurational perspective enables us to examine the combinations of these factors in shaping nonprofit sector density, represented by the intersecting areas in the figure.

We focus on two configurational mechanisms among these factors: complementary and supplementary (Misangyi and Acharya 2014). A *complementary* mechanism indicates that multiple factors work together in a mutually enhancing manner. A combination of population heterogeneity, resource munificence, government expenditure, and government fragmentation in a complementary manner implies that the positive or negative relationships among the factors as well as their combinations produce a synergistic positive or negative impact on nonprofit sector density. A *supplementary* mechanism indicates that some factors may compensate for others in shaping the outcome. A combination of these factors in a supplementary

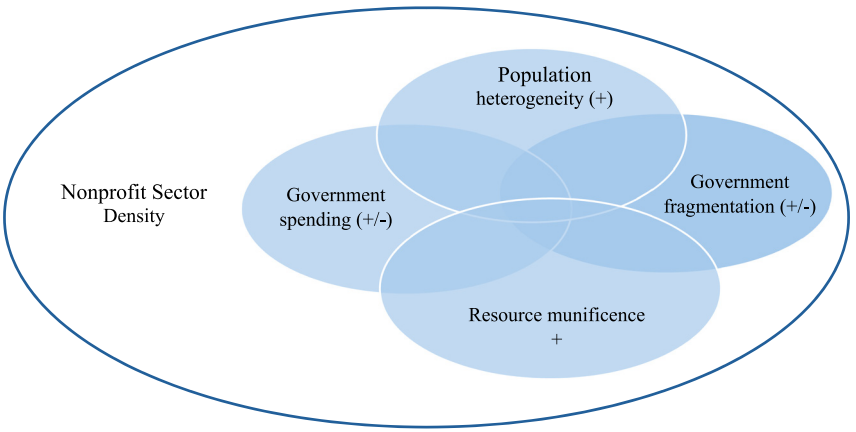

Figure 1: Configurational framework of nonprofit sector density. Note. Conditions: population heterogeneity (demand-side), resource munificence (supply-side), government spending (both demand and supply), and government fragmentation (both demand and supply). "+" indicates a positive impact of an individual condition; "–" indicates a negative impact; "+/–" denotes an unclear direction.

way suggests that negative effects of some conditions can be offset by positive effects of others (and their combinations) in shaping nonprofit sector density, and vice versa.

3 Empirical Setting

We investigate our research question in the context of the Chinese nonprofit sector. Since the founding of the People's Republic of China in 1949, the sector has undergone major shifts (Ma 2005; Teets 2014). From the 1950s to the 1970s, nonprofits were discouraged under an authoritarian system that managed most social affairs. Economic and political reforms starting in the early 1980s prompted a partial retreat of the party-state from direct control, opening space for nonprofit emergence and growth (Ho 2007). Over the past three decades, development has accelerated. As Frolic (1997, p. 46) noted, "as economic reform causes the Chinese party-state to loosen its grip, civil society will take shape and gain strength." By the end of 2023, mainland China had more than 880,000 officially registered nonprofits (Ministry of Civil Affairs of China 2024), a fivefold increase since 2000.[4] These nonprofits fall into three categories: associations, foundations, and private non-enterprise organizations.

Given that our theorizing about nonprofit sector density centers on service provision, we focus on private non-enterprise organizations – social organizations engaged in nonprofit service activities with non-state assets. These service nonprofits, whose primary function is delivery, now operate across a wide range of service areas such as community development, education, healthcare, and human services (e.g. Hu and Zhu 2021; Li et al. 2017; Wang and Kang 2018). The density of these organizations matters because service needs and government capacity vary sharply across provinces and prefectures. Where nonprofits are more concentrated, residents are more likely to access specialized services, especially for migrant communities, elder care, public health, and disaster relief, addressing gaps not fully covered by government (Hu and Zhu 2021; Yu 2016). Density also shapes how local governments contract for services and mobilize social resources, influencing equity in provision and the diffusion of policy innovations (Dong and Lu 2021; Zhan and Tang 2013).

Much of the discussion on the growth of the Chinese nonprofit sector adopts a state–society lens and emphasizes two dynamics. First, Chinese nonprofits respond to diverse service needs unmet by the regime, reflecting a supplementary role

4 Although scholars estimate that there are a considerable number of unregistered nonprofit organizations in operation (Hildebrandt 2011), unfortunately no data exist to analyze them.

consistent with government failure theory. Economic and social reforms since the late 1970s expanded needs the party-state could not fully meet (Ho 2007; Zhan and Tang 2013), and authorities have tolerated nonprofit service provision to draw on community expertise and private resources for social stability. At the same time, registration and oversight remain stringent under the dual management system, where organizations typically require sponsorship from a professional supervisory body; compliance and supervisory expectations are substantial and uneven across localities. Thus, the sector's growth coexists with notable regulatory hurdles (Hildebrandt 2011; Lyu et al. 2025; Sidel 2025). In this context, the nonprofit sector development reflects "an attempt on the part of the government to divest itself of some of the burdens of socio-economic development" (Whiting 1991, p. 17).

Second, nonprofits maintain close relationships with the party-state and often align with official priorities (Hsu and Hasmath 2014; Ni and Zhan 2017), highlighting complementarity and interdependence. Governments purchase services from nonprofits, creating contracting opportunities in areas such as elder care, public health, and community services, while party-building requirements, performance reporting, and funding compliance shape organizational behavior (Dong and Lu 2021; Levy and Ketels 2021). Many nonprofits, in turn, cooperate with government to secure resources and legitimacy, concentrating in government-prioritized fields and partnering with government-organized nonprofits where needed (Wang 2022; Yu 2016). These relationships vary by province and city, reflecting differences in fiscal capacity, administrative preferences, and supervisory practices (Chen et al. 2022). Overall, government–nonprofit relations in China feature both substitution (gap-filling) and complementarity (cooperation and contracting), a duality that makes our configurational approach especially meaningful by allowing us to model how demand, supply, and government provision combine into distinct pathways to nonprofit density.

In fact, despite rapid growth, empirical work on the drivers of Chinese nonprofit sector density remains limited, and only a small stream examines geographic variation. For example, Yu (2016) showed that the growth of AIDS nonprofits reflects political opportunity, funding, and organizational ecology. Lu and Dong (2018) found, at the prefecture level, that population heterogeneity, government social spending, and government fragmentation are positively associated with nonprofit size, underscoring governmental roles in mobilizing activity. While informative, most studies estimate marginal effects of single factors. Building on this work, we analyze how demand- and supply-side conditions operate in configurations to shape nonprofit sector density.

4 Methods

We conducted a configurational analysis of the distribution of Chinese private non-enterprise organizations using provincial-level data. The use of the province as the unit of analysis is based on several considerations. Province-level administrative and political regulations of nonprofit organizations are more extensive than at local levels such as prefectures and towns. Nonprofit organizations within a province are also more likely to share similar socioeconomic conditions. Methodologically, QCA is designed for an intermediate number of cases (10–50) (Ragin 2008). China's 31 provinces provide an appropriate number of cases with the necessary variation for our analysis. Additionally, data for all conditions are available across provinces but less so across cities.

Specifically, we employed the configurational, cross-case analytical approach of QCA because of its epistemological assumptions: examining cases holistically (case-based), identifying necessary and sufficient conditions (independent variables) for the outcome (dependent variable) (set-theoretic), investigating how conditions work together to influence the outcome (conjunctural causation), recognizing that different combinations of conditions can yield the same outcome (equifinality), and rejecting a symmetric perspective in which the causes of the presence of an outcome can simply be inverted to explain its absence (asymmetric causality) (Ragin 2008).

The choice to apply QCA is based on both theoretical and empirical considerations. Theoretically, we expect the conditions of interest to have a combinatorial impact on the outcome (nonprofit sector density). Empirically, we examine the potential configurational effects using a dataset of 31 cases. This number is too small for traditional correlation analysis but too large for in-depth case studies. Unlike correlation coefficients in multivariate analysis, QCA produces two key parameters of fit: consistency and coverage. *Consistency* refers to the extent to which cases included in a combination of conditions exhibit the same outcome, while *coverage* reflects the degree to which the outcome is accounted for by that configuration of conditions (Ragin 2008).

4.1 Empirical Cases

The cases in this study are the 31 Chinese provinces.[5] We compiled provincial data from the National Bureau of Statistics' China Statistical Yearbooks. To better inform causal inference, we used 2018 data for the outcome and 2017 data for the demand-

5 These 31 provinces include four municipalities (Beijing, Chongqing, Shanghai, Tianjin) and five autonomous regions (Guangxi, Nei Menggu, Ningxia, Xinjiang, Xizang).

and supply-side conditions. Table 1 describes the outcome and conditions, including the measures and descriptive statistics.

4.2 Operationalization and Calibration

In QCA, each case is assigned set-based membership scores for each condition and the outcome. These scores indicate the degree to which a case belongs to the set defined by a condition or outcome. Using fuzzy sets, we calibrated the outcome and conditions to reflect varying degrees of membership because they are continuous variables (Rihoux and Ragin 2009). In the absence of well-developed theoretical and substantive knowledge on the key calibrating thresholds, a direct calibration method is recommended (Ragin 2008). We therefore used direct calibration based on the data distribution, setting the 95th percentile as full membership (1), the 5th percentile as full non-membership (0), and the 50th percentile as the crossover (0.5). Raw values between the 5th and 50th percentiles were coded between 0 and 0.5 (more-out-than-in), and values between the 50th and 95th percentiles were coded between 0.5 and 1 (more-in-than-out).

4.3 Nonprofit Sector Density

The study's outcome of interest is *nonprofit sector density* at the provincial level. Following prior work (e.g. Grønbjerg and Paarlberg 2001; Kim 2015; Lecy and Van Slyke 2013; Lu and Dong 2018), we operationalized this outcome as the number of private non-enterprise organizations per 10,000 people in each province. Figure 2 shows the distribution of private non-enterprise organizations across Chinese provinces, clearly indicating cross-province variation. We calibrated the outcome using three thresholds: (1) full membership (95th percentile) = 5.06; (2) crossover (50th percentile) = 2.95; and (3) full non-membership (5th percentile) = 1.67.

4.4 Population Heterogeneity

Population heterogeneity is a multidimensional construct, and prior research measures it using various demographic indicators (see Lu 2020; Matsunaga et al. 2010, for reviews). Following this literature (e.g. Lecy and Van Slyke 2013; Marchesini da Costa 2016; Peck 2008) and considering the Chinese context and data availability, we used three indicators to capture population diversity: *share of young and elderly residents* (0–14 and 65+), *unemployment rate*, and *poverty rate*, each measured as a proportion

Table 1: Description of outcome and conditions (N = 31).

		Measurement	Mean	SD	Min	Max	Data source
Outcome							
Nonprofit sector density		The number of private non-enterprise organizations per 10,000 people in a province in 2018	3.01	1.21	0.14	6.84	Statistical Yearbooks 2019
Demand-side conditions							
Share of young & elderly residents		The percentage of young and elderly residents in a province in 2017	27.65	3.03	22.08	32.10	Statistical Yearbooks 2018
Share of vulnerable residents	Unemployment rate	The percentage of unemployed residents in a province in 2017	3.18	0.64	1.4	4.2	Statistical Yearbooks 2018
	Poverty rate	The percentage of people in poverty in a province in 2017	4.56	3.25	0.56	13.88	Statistical Yearbooks 2018
Supply-side conditions							
Resource munificence	Per capita GDP	The per capita GDP in a province in 2017	60,855.74	27,573.46	28,497	128,994	Statistical Yearbooks 2018
	Per capita disposable income	The per capita amount of disposable income in a province in 2017	25,923.39	10,568.87	15,457.3	58,988	Statistical Yearbooks 2018
Government provision conditions							
Basic public service spending		The per capita amount of government expenditure on basic public services in a province in 2017	5,645.10	2,244.77	3,651.01	14,150.15	Statistical Yearbooks 2018
Government fragmentation		The number of local government units in a province per 10,000 people in 2017	0.40	0.38	0.10	2.31	Statistical Yearbooks 2018

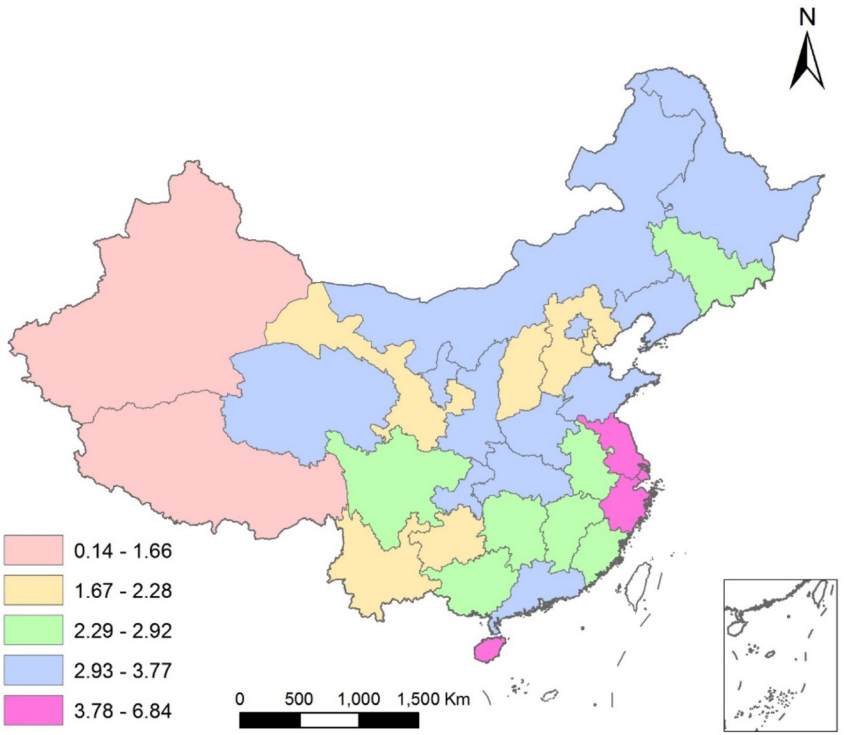

Figure 2: The distribution of private non-enterprise organizations across Chinese provinces (2018). Unit: The number of organizations per 10,000 people. Data source: National Bureau of statistics of China.

of the total population. The share of young and elderly residents was calibrated using three thresholds: full membership (95th percentile) = 31.85, crossover (50th percentile) = 27.94, and full non-membership (5th percentile) = 22.99. The poverty and unemployment rates were calibrated separately on three thresholds: 10.34, 3.25, and 0.98 for poverty; and 4.00, 3.30, and 2.25 for unemployment. Because poverty and unemployment are distinct indicators within the higher-level construct of *vulnerable residents*, the larger of the two can substitute for the smaller, indicating greater service need. Following a macrocondition calibration strategy (Marx et al. 2014; Freitag and Schlight 2009), we then combined them using a Boolean *OR* to form a single condition, *share of vulnerable residents*, by taking whichever calibrated fuzzy-set membership value was larger.

4.5 Resource Munificence

We measured resource munificence using two indicators: per capita gross domestic product (GDP) and per capita disposable income for each province. We first calibrated them separately using three thresholds (122,789, 49,558, and 36,088.50 for per capita GDP; and 49,637.75, 21,863.30, and 16,357.30 for per capita disposable income) and then combined them into a single macrocondition, *resource munificence*, by taking whichever calibrated membership value was larger.

4.6 Government Provision

We used two conditions to capture government provision of public services. The first, *basic public service spending*, is measured as per capita government expenditure on three basic services (education, health, and social security/employment) within a province. The three calibration thresholds are 9,892.68 (full membership), 4,924.95 (crossover), and 3,825.08 (full non-membership). The second, *government fragmentation*, refers to the horizontal and vertical proliferation of government units in a geographic region. Following prior research (e.g. Hendrick et al. 2011; Jeong and Cui 2020; Liu 2017), we measured it as the number of local administrative entities (counties, towns, villages) per 10,000 people in a province and calibrated it at 0.67, 0.32, and 0.16, respectively.

Calibration thresholds and descriptive statistics of calibrated fuzzy-set membership scores are presented in Tables 2 and 3.

Table 2: Fuzzy-set calibration thresholds.

	95th percentile	50th percentile	5th percentile
Outcome			
Nonprofit sector density	5.06	2.95	1.67
Demand-side conditions			
Share of young and elderly residents	31.85	27.94	22.99
Unemployment rate	4	3.3	2.25
Poverty rate	10.34	3.25	0.98
Supply-side conditions			
Per capita GDP	122,789	49,558	36,088.50
Per capita disposable income	49,637.75	21,863.30	16,357.30
Government provision conditions			
Basic public service spending	9,892.68	4,924.95	3,825.08
Government fragmentation	0.67	0.32	0.16

Table 3: Descriptive statistics of calibrated fuzzy-set membership scores.

	Mean	SD	Min	Max	N of cases
Outcome					
Nonprofit sector density	0.47	0.28	0.01	1	31
Demand-side conditions					
Share of young & elderly residents	0.50	0.34	0.03	0.96	31
Share of vulnerable residents (poverty rate or unemployment rate)	0.70	0.28	0.04	1	31
Supply-side condition					
Resource munificence (per capita GDP or per capita disposable income)	0.53	0.27	0.05	0.99	31
Government provision conditions					
Basic public service spending	0.43	0.29	0.04	1	31
Government fragmentation	0.48	0.29	0.03	1	31

4.7 Truth Table Analyses

After calibration, we generated a truth table that displays all logically possible combinations of causal conditions and assigns each case to a configuration (Ragin 2008). Each set of conditions (2^k; k = number of conditions, which is 5 in this study; 5 conditions yielded 32 combinations/rows) represents a row in the truth table (see Appendix). We first conducted a necessary condition analysis and then focused on the sufficiency of combinations of conditions.

For necessity, we used a minimum consistency threshold of 0.90 (Schneider and Wagemann 2012). A necessary condition must have a consistency score ≥0.90. None of the conditions are necessary for either high or low nonprofit sector density. The truth table rows represent configurations assumed to be sufficient for high nonprofit sector density. In small- and medium-N studies, not all possible rows (32 here) will have empirical cases. Following standard practice, we retained only rows with at least one case (Ragin 2008) and then selected those with a minimum raw consistency of 0.80 (Schneider and Wagemann 2012), yielding 10 rows.

We then applied the Quine–McCluskey algorithm (a Boolean algebra procedure) to simplify these 10 rows. Standard analyses produced complex, parsimonious, and intermediate solutions. The intermediate solution incorporates theoretical expectations. As outlined in the theory section, we expected the presence of share of young and elderly residents, share of vulnerable residents, and resource munificence to contribute to high nonprofit sector density, while basic public service spending and government fragmentation could be either present or absent.

We distinguished core and peripheral conditions by comparing the parsimonious and intermediate solutions. Core conditions indicate a stronger relationship with the outcome, while peripheral conditions indicate a weaker one (Fiss 2011). Conditions that appear in both the parsimonious and intermediate solutions are classified as core, whereas those that appear only in the intermediate solution are considered peripheral (Ragin 2008; Fiss 2011). Finally, we recalibrated the outcome for low nonprofit sector density, setting the 5th percentile as full membership, the 50th percentile as the crossover, and the 95th percentile as full non-membership, and then identified configurations sufficient for low nonprofit sector density.

5 Results

We present the results in Table 4, which shows three configurations for high nonprofit sector density and two for low nonprofit sector density. Each column represents a specific configuration, combination, or pathway. A large black circle ● refers to the presence of a core condition; a large crossed-out circle ⊗ means the absence of a core condition; a small black circle • suggests the presence of a peripheral condition; a small crossed-out circle ⊗ shows the absence of a peripheral

Table 4: Pathways to high and low nonprofit sector density across 31 Chinese provinces.

	Underlying theories	**High density**			**Low density**	
		1	**2**	**3**	**1**	**2**
Demand-side conditions						
Share of young and elderly residents	Government failure		⊗	•		●
Share of vulnerable residents			•	•		●
Supply-side condition						
Resource munificence	Resource mobilization	●		●	⊗	
Government provision conditions						
Basic public service spending	Government failure Interdependence		●			
Government fragmentation	Government decentralization	⊗	⊗		●	●
Consistency		0.81	0.82	0.87	0.90	0.92
Raw coverage		0.76	0.39	0.48	0.67	0.56
Unique coverage		0.24	0.09	0.02	0.14	0.01
Overall consistency				0.90		0.82
Overall coverage				0.78		0.77

●: presence of core condition; •: presence of peripheral condition; ⊗: absence of core condition; ⊗: absence of peripheral condition; Blank space indicates it does not matter.

condition; a blank space represents a "does not matter" condition that plays no role in the configuration leading to the outcome (Fiss 2011).

With consistency levels above 0.80 for the overall solutions and individual pathways, the configurations reliably capture the presence of high and low nonprofit sector density in the cases. Coverage scores near or exceeding 0.50 indicate that about half or more of the cases are explained by these pathways. The results identify three pathways to high nonprofit sector density and two pathways to low nonprofit sector density. We describe these pathways below.

5.1 Pathway to High Nonprofit Sector Density #1

This pathway features low government fragmentation as a peripheral condition and high resource munificence as a core condition. Three provinces follow this pattern: Hainan, Jiangsu, and Zhejiang. For example, Zhejiang Province has low government fragmentation (0.26 government units per 10,000 people, about the 25th percentile) but high resource munificence (RMB 92,057 per capita GDP and RMB 42,045.7 per capita disposable income, both around the 90th percentile). Together, these factors contribute to a high nonprofit sector density (5.31 nonprofits per 10,000 people, about the 95th percentile). This pattern is consistent with a "resources plus gaps" mechanism: high munificence provides the capacity for nonprofit entry and survival, while low fragmentation may be associated with less responsive public provision, leaving more room for nonprofits to fill residual needs.

5.2 Pathway to High Nonprofit Sector Density #2

This configuration combines high basic public service spending and a low share of young and elderly residents as two core conditions, along with low government fragmentation and a high share of vulnerable residents as peripheral conditions. It encompasses Liaoning, Ningxia, and Shaanxi. For instance, Liaoning Province has relatively high public service spending (RMB 5,322.11 per capita, near the 60th percentile), a low share of young and elderly residents (24.21 %, about the 10th percentile), low government fragmentation (0.38 government units per 10,000 people, about the 50th percentile), and a high share of vulnerable residents (3.8 % unemployment rate, close to the 90th percentile). These four conditions jointly contribute to high nonprofit density (3.76 nonprofits per 10,000 people, around the 80th percentile). This pathway is consistent with a complementary demand-and-supply mechanism: higher vulnerability is linked to greater service needs, and low fragmentation may be less responsive to these needs, creating gaps for nonprofits to

address; at the same time, higher public service spending can mobilize and fund nonprofits through contracting and partnership opportunities.

5.3 Pathway to High Nonprofit Sector Density #3

This pathway includes high resource munificence as a core condition, combined with high shares of young and elderly residents and vulnerable residents as peripheral conditions. Shandong Province illustrates this configuration, with relatively high shares of young and elderly residents (30.56 %, about the 75th percentile) and vulnerable residents (3.4 % unemployment, about the 60th percentile), along with high resource munificence (RMB 72,807 per capita GDP and RMB 26,929.9 per capita disposable income, both near the 75th percentile). These conditions result in relatively high nonprofit density (3.34 nonprofits per 10,000 people, about the 75th percentile). This pattern is consistent with a "needs plus capacity" mechanism: higher population heterogeneity signals greater service diversity, while resource munificence supplies the means for nonprofits to emerge and sustain operations.

5.4 Pathway to Low Nonprofit Sector Density #1

This pathway combines high government fragmentation and low resource munificence as two core conditions. Four provinces follow this pattern: Guizhou, Shanxi, Tibet, and Yunnan. Guizhou Province is a clear example, with high government fragmentation (0.41 government units per 10,000 people, about the 75th percentile) and low resource munificence (RMB 37,956 per capita GDP, about the 10th percentile; RMB 16,703.6 per capita disposable income, about the 5th percentile). This combination produces low nonprofit density (1.71 nonprofits per 10,000 people, close to the 5th percentile). This pathway suggests the opposite "resources plus gaps" logic: low munificence constrains nonprofit viability, and higher fragmentation may be linked to more responsive public provision, leaving fewer residual needs for nonprofit expansion.

5.5 Pathway to Low Nonprofit Sector Density #2

This pathway features high government fragmentation, a large share of young and elderly residents, and a large share of vulnerable residents as three core conditions. Two provinces follow this configuration: Hebei and Xinjiang. For example, Hebei Province has relatively high government fragmentation (0.32 government units per

10,000 people, about the 50th percentile) along with high shares of young and elderly residents (29.76 %, about the 75th percentile) and vulnerable residents (3.7 % unemployment, about the 75th percentile). Together, these factors lead to low nonprofit density (2.17 nonprofits per 10,000 people, about the 25th percentile). This pathway is consistent with a substitution mechanism: even when service needs are high, greater fragmentation may improve preference matching and responsiveness, reducing the residual demand that nonprofits would otherwise meet.

In sum, high nonprofit sector density tends to arise where resource munificence is strong, paired with low government fragmentation and/or greater service demand (larger shares of young and elderly and vulnerable residents). It also emerges under higher public service spending combined with low fragmentation, higher vulnerability, and a lower share of young and elderly residents. By contrast, low nonprofit sector density consistently appears where government fragmentation is high, coupled with either weak resource munificence or high service demand.

6 Discussion

The growing importance of the nonprofit sector in governance has spurred scholarly interest in the factors that influence nonprofit sector density. Despite extensive research, existing knowledge remains deficient, primarily because it overlooks the complex interplay of demand-side and supply-side factors. This gap obscures the complexity of nonprofit sector development and how specific combinations of factors shape density. Our study addresses this issue by examining how these factors interact to influence nonprofit sector density, using mainland China as the empirical context. Through fsQCA, we identify multiple pathways that lead to either high or low density, revealing nuanced dynamics among the variables. These findings have several theoretical implications.

First, our study underscores the complex nature of nonprofit sector density, revealing that it is not driven by isolated demand- or supply-side factors but by the interplay of multiple conditions. Contrary to simplistic explanations, our findings highlight the complexity inherent in nonprofit sector density. We show that density is influenced by the synergistic effects of various combinations of factors, each yielding distinct outcomes. This indicates that understanding nonprofit dynamics requires looking beyond individual factors and considering how they operate together in different configurations. By illuminating these interrelationships, our research demonstrates that nonprofit sector development arises from multifaceted and interconnected forces.

Second, our findings indicate that no single factor consistently plays a determinative role in shaping nonprofit sector density, helping to explain inconsistent

results in the literature. The effect of any individual factor is contingent on the presence or absence of other conditions, and multiple pathways can lead to similar outcomes. This variability highlights the need for a more nuanced approach that recognizes configuration-based pathways rather than relying on single-variable explanations. There is no single formula; nonprofit sector density emerges from configurations of multiple factors.

Third, our configurational findings clarify how nonprofit theories can be combined to explain density. Over the past few decades, scholars have developed several theories to account for nonprofit growth. While there is broad agreement that these theories are complementary (Anheier 2005, p. 131), little research examines how they work together. Through a configurational analysis of demand- and supply-side conditions, we explore mixes of government decentralization, government failure, interdependence, and resource mobilization theories (see Table 4). By examining how these theories interact in different configurations, our study provides a more comprehensive understanding of nonprofit sector density, moving beyond single-theory tests.

Specifically, our analysis shows that three different mixes of demand- and supply-side conditions predict high nonprofit sector density. First, high density occurs in provinces with high resource munificence and low government fragmentation (High Nonprofit Sector Density #1). This configuration suggests a complementary match of resource mobilization and government decentralization theories: when a province has low fragmentation, public service provision is less responsive to diverse demands, leaving room for nonprofits to act as "gap-fillers," while a resource-rich environment enables nonprofits to emerge and grow. Therefore, we suggest:

> **Proposition 1a**. A complementary combination of high resource munificence (resource mobilization theory) and low government fragmentation (government decentralization theory) is sufficient to generate high nonprofit sector density.

Second, high density also prevails in provinces with high basic public service spending, low government fragmentation, low shares of young and elderly residents, and a large share of vulnerable residents (High Nonprofit Sector Density #2). Although the low share of young and elderly residents is not fully consistent with our expectation, this configuration largely reflects a complementary mix of government failure, interdependence, and government decentralization theories. On the demand side, greater vulnerability raises diverse service needs, and less fragmented governments may be less responsive to these needs, prompting nonprofit formation (government failure and decentralization). On the supply side, higher public service spending can mobilize and fund nonprofits (interdependence). Thus, we argue:

> **Proposition 1b**. A complementary combination of high population heterogeneity (government failure theory), high government spending (interdependence theory), and low government fragmentation (government decentralization theory) is sufficient to generate high nonprofit sector density.

Third, high density can also appear in provinces with large shares of young and elderly residents, large shares of vulnerable residents, and high resource munificence (High Nonprofit Sector Density #3). This complementary mix indicates that government failure and resource mobilization theories can work together: greater service diversity increases demand for nonprofits, and a resource-munificent environment supplies the means for nonprofit emergence and sustainability. Thus, we propose:

> **Proposition 1c**. A complementary combination of high population heterogeneity (government failure theory) and high resource munificence (resource mobilization theory) is sufficient to generate high nonprofit sector density.

In the same manner, our analysis suggests two mixes of demand- and supply-side conditions associated with low nonprofit sector density. First, provinces with low resource munificence and high government fragmentation exhibit low density (Low Nonprofit Sector Density #1) – the counterpart to High Density #1 – again implying a complementary mix of resource mobilization and government decentralization theories. On the demand side, more fragmented governments may better tailor services, leaving less residual demand; on the supply side, resource-poor environments are less able to sustain nonprofits. As such, we posit:

> **Proposition 2a**. A complementary combination of low resource munificence (resource mobilization theory) and high government fragmentation (government decentralization theory) is sufficient to generate low nonprofit sector density.

Second, low density may also occur in provinces with large shares of young and elderly residents, large shares of vulnerable residents, and high government fragmentation (Low Nonprofit Sector Density #2). This supplementary configuration aligns government failure with government decentralization: high demand diversity coincides with more fragmented governments that can respond more closely to preferences, leaving fewer unmet needs for nonprofits. Therefore, we propose:

> **Proposition 2b**. A supplementary combination of high population heterogeneity (government failure theory) and high government fragmentation (government decentralization theory) is sufficient to generate low nonprofit sector density.

In addition to these theoretical contributions, the findings have policy implications for strengthening nonprofit sector development. At a general level, they highlight the

need to move beyond one-size-fits-all reforms toward configuration-aware, place-based bundles of policies. Policy should target combinations of conditions, not single levers. Where fragmentation is high, governments can boost nonprofit density by improving coordination (e.g. pooled procurement and shared service platforms) and by clarifying roles across tiers. In low-resource provinces, targeted transfers, seed grants, and capacity-building in management and fundraising can enhance viability, complemented by incentives for private giving. In high-demand settings (larger shares of young and elderly and vulnerable residents), streamlined registration, proactive outreach, and co-produced service models lower entry barriers and better match services to local needs. Where public service spending is substantial and fragmentation is low, multi-year contracts, transparent competition, and performance-informed funding can catalyze growth without crowding out initiative. To reduce spatial disparities, matching grants and outcome bonuses can steer organizations toward underserved areas. Overall, the fsQCA results point to bundled, context-specific interventions and the importance of piloting and evaluation, given that government spending may either substitute for or complement nonprofit provision depending on accompanying conditions.

7 Conclusions

Our research is an early effort to examine how demand- and supply-side conditions jointly shape nonprofit sector density, using China's nonprofit sector as the empirical context. Rather than treating demand and supply influences as independent, our configurational analysis shows that density emerges from specific combinations of conditions, and that the importance of any single condition depends on the presence or absence of others. The findings identify multiple pathways to both high and low density, demonstrating equifinality, causal conjunction, and asymmetric causation, and highlighting how nonprofit theories can operate through a configurational lens, complementarily or supplementarily. By moving beyond additive and competing explanations and instead focusing on configurational theorizing, the study advances a more holistic understanding of nonprofit sector development and broadens the empirical evidence base from a non-Western setting.

Our research has several limitations. First, we focus on five theoretically derived demand- and supply-side factors, but these do not exhaust all relevant conditions or theories. Future work may consider political dynamics, government actions, and service areas (Hsu and Hasmath 2014). Second, population heterogeneity is multi-dimensional and difficult to measure; our proxies (young, elderly, poor, unemployed) may not capture all facets. Third, given the exploratory nature of our study and the lack of widely accepted benchmarks in prior literature, we calibrated all variables

using uniform 95th/50th/5th percentile thresholds for comparability. Future research could adopt differentiated, theory-anchored calibration when such anchors are available to strengthen robustness and interpretability. Fourth, the analysis is cross-sectional. Although the conditions are relatively stable over a few years and longitudinal QCA is less developed, future research could assess temporal dynamics. Fifth, by focusing on private non-enterprise organizations and excluding associations and foundations, we may not capture the entire sector. Finally, China's unique institutional features may limit statistical generalizability across countries, though the findings offer analytical generalizability to similar contexts (Yin 2009).

In sum, this study is exploratory, and we encourage future research to employ configurational approaches to extend this line of inquiry.

Appendix

Truth table for high nonprofit sector density

Basic public service spending	Government fragmentation	Share of young and elderly residents	Share of vulnerable residents	Resource munificence	Number of cases	Raw consist.
1	1	0	1	1	5	0.91
1	1	1	1	0	4	0.62
0	0	1	1	1	4	0.89
0	1	0	1	0	3	0.76
0	0	1	1	0	2	0.77
0	1	1	1	0	2	0.73
0	0	0	0	1	2	0.94
1	0	0	0	1	2	0.91
1	0	0	1	1	2	0.86
1	1	0	1	0	1	0.82
0	0	1	0	1	1	0.96
1	0	1	0	1	1	0.99
0	1	1	1	1	1	0.89
1	1	1	1	1	1	0.91
0	0	0	0	0	0	
1	0	0	0	0	0	
0	1	0	0	0	0	
1	1	0	0	0	0	
0	0	1	0	0	0	
1	0	1	0	0	0	
0	1	1	0	0	0	
1	1	1	0	0	0	
0	0	0	1	0	0	

(continued)

Truth table for high nonprofit sector density						
Basic public service spending	**Government fragmentation**	**Share of young and elderly residents**	**Share of vulnerable residents**	**Resource munificence**	**Number of cases**	**Raw consist.**
1	0	0	1	0	0	
1	0	1	1	0	0	
0	1	0	0	1	0	
1	1	0	0	1	0	
0	1	1	0	1	0	
1	1	1	0	1	0	
0	0	0	1	1	0	
0	1	0	1	1	0	
1	0	1	1	1	0	

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