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Institutional Alignment and Rural Livability: Public–Nonprofit Balance and Changes in Community Resilience*

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Abstract: Rural communities increasingly face challenges associated with demographic change, fiscal constraint, and institutional thinness, prompting a shift from growth-oriented development strategies toward broader frameworks of livability and resilience. While prior research has examined nonprofit–government relationships through complementary and supplementary lenses, less attention has been given to how changes in these relationships influence community outcomes over time. Using county-level data from Nebraska, we construct measures of local institutional capacity and public–nonprofit balance to estimate changes in community resilience (McCausland College of Arts and Sciences 2026) using first-difference estimates. Results indicate that increases in institutional balance are more consistently associated with improvements in resilience capital than overall institutional scale, suggesting that alignment across sectors matters more than capacity alone. However, these gains are significantly attenuated in rural counties, highlighting persistent structural constraints in translating institutional alignment into livability outcomes. By conceptualizing nonprofit–government relationships as dynamic institutional ecosystems, this study contributes to research on rural livability, intergovernmental relations, and regional resilience, and underscores the importance of institutional alignment in shaping place-based development.

Keywords: Rural Livability, Public–nonprofit Balance, Community Resilience, Institutional Alignment, Local Government Capacity

JEL Codes: H70, L31, R58

1. INTRODUCTION

Rural communities across the United States are confronting a fundamental shift in how development, prosperity, and well-being are understood and pursued. Traditional growth-oriented models—centered on employment, income, and population growth—have proven

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insufficient to capture the broader conditions that sustain viable and attractive communities. Increasingly, both scholars and practitioners emphasize livability, quality of life, and resilience as multidimensional outcomes shaped by social, economic, and institutional factors rather than growth alone (Isserman et al., 2009; Ahmed, 2019; Deller, 2021; Dsouza et al., 2023).

This shift reflects a broader transition in regional development thinking from a "people follow jobs" paradigm to one in which "jobs follow people," placing greater emphasis on place-based attributes that attract and retain residents (Kelly et al., 2017; Deller, 2021). Within this framework, investments in infrastructure, services, and social capital are not simply byproducts of growth but central drivers of community well-being. Yet despite growing interest in livability, the literature remains fragmented, with limited consensus on how to conceptualize, measure, and explain variation in community outcomes, particularly in rural contexts (Ahmed, 2019; Dsouza et al., 2023).

A key limitation of existing research is its focus on levels of community well-being rather than the processes through which communities improve or decline over time. While cross-sectional studies document substantial spatial variation in quality of life, they provide limited insight into how institutional and structural changes shape trajectories of livability. This limitation is especially salient in rural areas, where institutional capacity is often constrained and where small changes in governance, funding, or organizational structure may have disproportionate effects.

In parallel, a substantial literature in public administration and nonprofit studies examines relationships between governments and nonprofit organizations, typically framed as supplementary, complementary, interdependent, and even adversarial (Weisbrod, 1977, 1986; Young, 2006; Young and Casey, 2016; Wang and Ran, 2023). However, this literature largely treats these relationships as static configurations and focuses on sectoral outcomes rather than broader community-level effects. As a result, we know relatively little about how changes in local institutional systems—particularly the balance and interaction between public and nonprofit actors—shape changes in community well-being over time.

This study addresses this gap by conceptualizing local governments and nonprofit organizations as components of dynamic institutional ecosystems and examining how changes in these systems are associated with changes in rural livability. Drawing on the community capitals framework (Emery and Flora, 2006), and resilience frameworks, we operationalize livability using the Baseline Resilience Indicators for Communities (McCausland College of Arts and Sciences, 2026) and focus on changes in social, economic, and infrastructure capacity at the county level.

We introduce a key distinction between institutional scale and institutional alignment. Institutional scale reflects the overall level of activity across sectors, while institutional alignment captures the balance and coordination between public and nonprofit efforts. Using county-level data from Nebraska, we estimate first-difference models to assess whether changes in institutional balance and local capacity between 2010–2015 and 2015–2020 are associated with changes in resilience-based measures of livability.

The findings reveal a clear and consistent pattern: institutional alignment emerges as a stronger driver than institutional scale in improving resilience capacity. However, these gains are significantly attenuated in rural counties, suggesting that structural constraints limit

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institutional systems' ability to translate alignment into improved outcomes. These findings are organized around two central hypotheses: (H_1) that increases in public–nonprofit balance will be positively associated with improvements in county-level resilience; and (H_2) that these gains will be attenuated in rural counties, where structural constraints limit the translation of institutional alignment into community outcomes. By linking changes in institutional ecosystems to changes in community-level resilience, this study contributes to three areas of research. First, it advances the literature on rural livability by emphasizing dynamic processes rather than static conditions. Second, it extends research on nonprofit–government relationships by shifting the focus from sectoral roles to system-level alignment. Third, it contributes to regional science by demonstrating how institutional arrangements shape place-based development outcomes in spatially and contextually contingent ways.

2. LITERATURE REVIEW

2.1. Livability, Quality of Life, and the Shift Beyond Growth

The concept of livability has emerged as a central organizing framework in regional science, public administration, and development policy, reflecting a broader shift from narrow economic measures of growth toward multidimensional understandings of community well-being. Early research on regional development was largely grounded in neoclassical economic theory, which emphasized income, employment, and productivity as primary indicators of prosperity. Within this framework, growth was typically understood as a function of factor accumulation, technological change, and market efficiency, with relatively little attention paid to broader social or environmental conditions.

Over time, however, scholars increasingly recognized that economic growth alone provides an incomplete picture of well-being. Foundational work by Dasgupta and Weale (1992) and Diener and Seligman (2004) demonstrated that income-based measures fail to capture key dimensions of human welfare, including health, education, environmental quality, and social relationships. Similarly, the "happiness–income paradox" highlighted by Easterlin et al. (2010) underscores that increases in income do not necessarily translate into sustained improvements in subjective well-being. These insights prompted a shift toward more comprehensive frameworks of quality of life and livability that incorporate both objective and subjective indicators.

The expansion of livability as a concept has been accompanied by significant methodological innovation. Early attempts to measure quality of life relied on composite indices constructed from a range of indicators, often using simple aggregation methods (Slottje, 1991; Liu, 1977; Becker et al., 1987). Subsequent research introduced more sophisticated approaches, including principal component analysis (PCA), factor analysis, and structural equation modeling, to derive weights and reduce dimensionality (Pearson, 1901; Spearman, 1904; Krishnakumar and Nagar, 2008). These methods allow researchers to capture latent constructs underlying observed indicators, improving both the validity and interpretability of composite measures.

However, the construction of composite indices raises important methodological challenges. As Decancq and Lugo (2013) and Greco et al. (2019) note, choices regarding indicator

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selection, weighting, and aggregation can significantly influence results. The OECD/European Union/EC-JRC (2008) Handbook on Composite Indicators emphasizes that these decisions are inherently normative and require careful justification. More recent work has explored the role of spatial structure in composite indices, recognizing that livability is inherently spatial and that traditional methods may fail to capture spatial heterogeneity (Harris et al., 2011; Demšar et al., 2013; Cartone and Postiglione, 2021).

Empirical studies further demonstrate that livability varies significantly across regions. For example, Blomquist et al. (1988) and Roback (1982, 1988) highlight the role of amenities in shaping regional differences in wages and rents, while more recent work shows substantial variation in quality of life across regions and countries (Ferrara and Nisticò, 2015; Aroca et al., 2017; Sepúlveda Murillo et al., 2019). These findings underscore the importance of place-based factors in shaping well-being.

Despite these advances, the literature remains fragmented. As Ahmed (2019) and Dsouza et al. (2023) document, there is no universally accepted definition of livability, and empirical approaches vary widely across studies. Cheng et al. (2026) further demonstrate that methodological choices can significantly influence local-level results, particularly in rural and highly urban areas. This lack of consensus highlights the need for theoretically grounded approaches that link measurement to underlying processes.

2.2. Community Capitals, Resilience, and Dynamic Change

In response to these challenges, the community capitals framework has emerged as a unifying approach for understanding livability. This framework conceptualizes well-being as the product of multiple interacting forms of capital, including social, human, financial, physical, and natural capital (Emery and Flora, 2006). Rather than treating these dimensions independently, the framework emphasizes their interdependence and cumulative effects.

Within this perspective, resilience has become a central concept, reflecting the capacity of communities to adapt to change, absorb shocks, and sustain well-being over time. The BRIC framework operationalizes resilience through a set of standardized indicators capturing social, economic, housing, institutional, environmental, and infrastructural capacity at the county level. These indicators include measures such as educational attainment, employment rates, housing quality, and access to health care, providing a comprehensive assessment of community capacity. Resilience is inherently dynamic, reflecting processes of adaptation and transformation rather than static conditions. This aligns with broader developments in regional science, which emphasize path dependence, cumulative processes, and spatial heterogeneity in development outcomes (Kim and Kim, 2025). It also suggests that understanding livability requires attention not only to levels of capital but to changes in the systems that produce those capitals.

Recent methodological advances reflect this shift toward dynamic and multidimensional analysis. For example, Bayesian factor models (Aguilar and West, 2000; Hogan and Tchernis, 2004) and spatial factor analysis approaches (Qiu et al., 2018; Quick and Luan, 2021) have been used to capture latent structures in spatial data. These methods highlight the importance of accounting for both multidimensionality and spatial dependence in measuring community well-being.

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A critical limitation in much of the livability and quality-of-life literature, however, is its reliance on cross-sectional or static measures, which capture differences across places but provide limited insight into how communities evolve over time. While cross-sectional comparisons are useful for identifying spatial disparities, they are less effective for understanding the processes through which communities improve or decline. This limitation has been widely acknowledged in both the quality-of-life and regional development literatures, where scholars increasingly emphasize the need for dynamic approaches that capture temporal change (Ferrara and Nisticò, 2015; Amado et al., 2019).

Dynamic approaches to well-being measurement often rely on index decomposition and change metrics, such as the Malmquist index, which allows researchers to assess changes in efficiency and productivity over time (Amado et al., 2019). These approaches highlight that improvements in livability are not simply the result of higher levels of resources but depend on how effectively those resources are mobilized and transformed into outcomes. Similarly, longitudinal analyses of regional well-being demonstrate that changes in economic, social, and environmental conditions often occur unevenly across space, reflecting underlying structural and institutional differences.

From a methodological perspective, this shift toward dynamic analysis aligns with broader developments in econometrics and regional science. Techniques such as Bayesian dynamic factor models (Aguilar and West, 2000) and spatial-temporal principal component analysis (Heng et al., 2023) have been developed to capture evolving relationships in multidimensional data. While these methods are often applied in environmental or urban contexts, their underlying logic is directly relevant to the study of rural livability: community outcomes are not static but are shaped by evolving interactions among multiple factors.

In the context of this study, the use of first-difference models reflects this dynamic perspective, focusing explicitly on changes in both institutional ecosystems and resilience capacity. By examining within-county changes over time, this approach controls for time-invariant characteristics such as geography, historical development patterns, and long-standing institutional structures. This strategy is particularly important in rural contexts, where structural differences across counties are substantial and may obscure the effects of institutional change in cross-sectional analyses.

2.3. Fiscal Policy, Institutional Capacity, and Place-Based Development

A parallel literature examines the role of local government finances in shaping economic and social outcomes. Traditional economic models emphasize the role of taxes and public expenditures in influencing firm location decisions and economic growth. However, empirical evidence on these relationships is mixed. Deller and Maher (2024) analyzed the relationship between local fiscal policies and economic growth using a panel of Wisconsin counties. Their findings suggest that the impact of taxes and expenditures on growth is both time-varying and income-dependent, with higher taxes initially dampening growth but becoming positively associated with income growth in later periods and higher-income areas. This dynamic relationship challenges simple assumptions about the effects of taxation, demonstrating that fiscal impacts are context- and time-dependent rather than uniformly negative, and underscores the importance of considering the composition and timing of both tax and

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expenditure decisions (Deller and Maher, 2024).

More broadly, the literature suggests that public expenditures can contribute to livability by enhancing infrastructure, services, and amenities. Investments in transportation, public safety, and recreational facilities can improve quality of life and attract residents and businesses (Peach and Petach, 2016; Kelly, 2023). At the same time, fiscal constraints and political pressures can limit local governments' ability to invest in these areas, particularly in rural communities. Importantly, the relationship between fiscal policy and livability is mediated by the types of services provided. Research distinguishes between "productive" public goods, such as infrastructure and education, and "consumptive" goods, such as parks and recreation. However, this distinction has become increasingly blurred as the importance of quality of life and place-making has grown (Deller, 2021)

2.4. Nonprofit-government Relationships and Institutional Ecosystems

The relationship between nonprofit organizations and governments has been a central focus of research in public administration and nonprofit studies. Early work emphasized the role of nonprofits as supplementary providers, filling gaps left by government provision. Supplementary relationships emerge when nonprofits fill gaps in government provision, particularly in contexts characterized by heterogeneous preferences (Weisbrod, 1977, 1986). Subsequent research introduced the concept of complementarity, in which governments finance services delivered by nonprofit organizations. Complementary relationships, in contrast, involve governments financing services delivered by nonprofits (Young and Casey, 2016). More recent work emphasizes interdependence and network governance, highlighting the complex and evolving nature of cross-sector relationships (Wang and Ran, 2023).

Drawing on government failure theory, a substantial body of empirical research suggests that nonprofits emerge to supplement the uniform provision of government services when public provision fails to reflect heterogeneous local preferences (Weisbrod, 1977, 1986; Liu and Weinberg, 2004). However, the nature of this relationship is contingent on both supply-side and demand-side factors, including the degree of decentralization, service domain characteristics, and variation in local socioeconomic conditions (Liu and Weinberg, 2004; Jeong and Cui, 2020; He and Jing, 2024). In particular, fiscal federalism introduces an additional layer of complexity by shaping the incentives and constraints faced by local governments.

Intergovernmental fiscal relationships (IGFRs)—including the structure of grants, the balance between own-source revenues and transfers, and the degree of fiscal autonomy—can alter how local governments and nonprofits interact in the provision of public goods. Under conditions of limited fiscal autonomy or high dependence on conditional transfers, local governments may prioritize externally imposed policy objectives over locally determined needs, potentially weakening both supplementary and complementary relationships (Oates, 1999, 2005; Weingast, 2009).

Recent evidence suggests that complementary relationships between nonprofits and local governments may emerge under specific institutional and fiscal conditions. These include settings in which governments provide stable funding and flexible contractual arrangements, allowing nonprofits to deliver services in areas such as education, healthcare, housing, and environmental protection (Cheng et al., 2023; Park, 2023). Other studies emphasize that lo-

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cal government funding can support nonprofit growth and sustainability, particularly when relationships are structured to align incentives and reduce administrative burdens (Kim et al., 2018; Peng et al., 2020; Cheng and Li, 2022). However, these complementary relationships are not automatic. Their effectiveness depends critically on how responsibilities, resources, and decision-making authority are distributed across sectors. Where institutional arrangements are misaligned—such as when funding is highly conditional or coordination is weak—collaboration may fail to translate into improved outcomes.

The literature has also identified crowding-out as a potentially important dynamic: where government expands service provision, it may reduce the perceived need for nonprofit activity, potentially displacing private voluntary effort and creating path dependence that limits nonprofit entry into certain service domains (Weisbrod, 1977, 1986). In the context of rural Nebraska, however, crowding-out is unlikely to be the dominant dynamic, given that both government and nonprofit presence are thin and unmet need typically exceeds available provision from either sector.

While the literature has made important distinctions between supplementary and complementary relationships, it has largely treated governments as unitary actors and has focused on static configurations rather than dynamic institutional change. As a result, less attention has been given to how the structure and evolution of local institutional ecosystems—shaped by fiscal capacity, intergovernmental relationships, and organizational alignment—affect broader community outcomes. This limitation is particularly relevant in rural contexts, where institutional capacity is constrained and where the interaction between nonprofit and government actors may be more consequential to produce community capitals.

At the same time, research on collaboration suggests that the presence of multiple actors does not guarantee improved outcomes. Studies of cross-sector collaboration indicate that relational factors such as trust, communication, and networks are important but not sufficient. Under certain conditions, increased interaction can generate coordination costs, misaligned expectations, or symbolic engagement, limiting effectiveness (Babiak and Thibault, 2009; Andrews and Entwistle, 2010). Recent comparative fieldwork reinforces this point: in a study of civil society–municipal collaboration across Peruvian municipalities, de la Riva Agüero (2026) finds that collaboration improves service performance only where municipal collaboration-management capacity, supportive perceptions of partner organizations, and engaged organizational leadership are jointly strong and aligned. Crucially, municipal capacity is foundational: without it, even proactive partners cannot translate engagement into improved outcomes, and the threshold of conditions required rises sharply as services become more complex. The literature on public–private partnerships (PPPs) provides additional insights into how institutional arrangements shape outcomes. PPPs are characterized as durable, complex forms of cooperation involving shared risks, resources, and responsibilities across sectors (Gray, 1989; Bryson et al., 2006). Research shows that PPP performance depends critically on the alignment of roles, incentives, and governance structures, rather than simply the scale of investment.

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2.5. Institutional Alignment, Rural Context, and Research Gap

Taken together, the literatures on livability, community capitals, and nonprofit–government relations point to an important but underdeveloped insight: community outcomes are shaped not only by the presence of institutional actors, but by how their activities are structured and aligned. Existing research has largely emphasized institutional scale—the level of public expenditures, nonprofit activity, or organizational density—as a proxy for capacity. This perspective implicitly assumes that greater resources and activity lead to improved outcomes. However, evidence from collaboration and governance literature suggests that increased scale does not necessarily translate into effectiveness, particularly when coordination is weak or when roles are poorly aligned (Bryson et al., 2006; Babiak and Thibault, 2009; Andrews and Entwistle, 2010).

In contrast, this study advances the concept of institutional alignment, defined as the degree to which public and nonprofit actors operate in a balanced manner. Drawing on theories of complementarity (Weisbrod, 1986; Young, 2006) and interdependence (Wang and Ran, 2023), we argue that aligned systems—where responsibilities, resources, and service provision are coordinated—are better positioned to translate institutional capacity into community outcomes. This logic is consistent with evidence from resource-constrained settings: de la Riva Agüero (2026) shows that the effectiveness of cross-sector collaboration depends less on the presence of any single actor than on the alignment of capacity, perceptions, and leadership, and that this alignment is harder to achieve where municipal capacity is weak—precisely the conditions that characterize many rural jurisdictions.

This distinction between scale and alignment provides a new lens for understanding rural livability. While institutional scale captures the quantity of activity, institutional alignment captures the structure of that activity. Importantly, these dimensions may have different—and potentially opposing—effects. Increases in scale may reflect either expanded capacity or increased need, while alignment reflects the efficiency with which resources are coordinated and deployed.

The importance of this distinction is likely to be particularly pronounced in rural contexts. Rural communities are characterized by thinner institutional ecosystems, smaller tax bases, and greater dependence on intergovernmental transfers (Oates, 1999, 2005; Honadle, 2011). These conditions constrain both the availability of resources and the flexibility with which they can be used. As a result, even when institutional alignment improves, the capacity to translate that alignment into improved outcomes may be limited.

This perspective highlights three gaps in existing literature. First, most studies examine static institutional configurations rather than changes over time. Second, research on nonprofit–government relationships has focused primarily on sectoral outcomes rather than broader measures of community well-being. Third, limited attention has been given to how these relationships operate differently across the rural–urban continuum.

This study addresses these gaps by examining whether changes in institutional ecosystems—specifically institutional balance and local capacity—are associated with changes in resilience-based measures of livability, and whether these relationships vary across rural and non-rural contexts. By doing so, it shifts the focus from institutional capacity alone to the structure and coordination of institutional systems as drivers of place-based development.

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2.6. Nebraska Counties

The selection of Nebraska counties as the empirical setting for this study is both theoretically and methodologically appropriate for examining the relationship between institutional ecosystems and rural livability. Nebraska provides a particularly useful context because it combines a high proportion of rural jurisdictions with relatively consistent institutional and fiscal structures across counties. The challenges facing Nebraska's rural counties—including resource scarcity, demographic decline, and constrained institutional capacity—are broadly representative of patterns documented in the rural development literature (Flora and Flora, 2008; Honadle, 2011). This combination allows for the isolation of institutional effects while minimizing confounding variation arising from cross-state policy differences.

Nebraska's county system is characterized by small populations, limited fiscal capacity, and geographic dispersion, conditions representative of many rural regions in the United States. As documented in prior research, the majority of Nebraska counties have populations under 10,000, with many under 1,000 residents, and are located at considerable distances from major urban centers (Maher et al., 2020). These characteristics create a setting in which institutional ecosystems are relatively thin, and the capacity of local governments and nonprofit organizations to deliver services is constrained by scale and resource limitations.

At the same time, Nebraska counties operate within a relatively uniform institutional framework. Counties share similar statutory responsibilities, fiscal structures, and reporting requirements, which enhances comparability across units of analysis. This consistency is particularly important for empirical analysis, as it reduces variation attributable to institutional rules and allows for a clearer focus on differences in institutional capacity and alignment. Prior studies emphasize that comparing local governments within a single state improves internal validity by controlling for legal, political, and administrative differences that complicate cross-state comparisons (Maher et al., 2020).

Another advantage of the Nebraska context is the availability of uniform and accessible financial and organizational data. Smaller local governments often lack comprehensive financial reporting systems, such as ACFRs, which limit the ability to conduct detailed fiscal analyses in many settings. However, Nebraska counties are required to submit standardized financial information, enabling the construction of comparable measures across all counties. This aligns with broader calls in the literature for parsimonious, replicable measures that can be applied to small and rural governments lacking extensive administrative capacity (Maher et al., 2020).

Importantly, Nebraska counties also illustrate the broader challenges facing rural institutional ecosystems. Research on fiscal conditions in Nebraska indicates that while counties may not exhibit widespread fiscal distress, they remain vulnerable to demographic change, economic shocks, and population decline, particularly in more remote areas. These vulnerabilities underscore the importance of understanding how institutional systems function in environments with limited capacity and how changes in those systems influence community outcomes.

Taken together, Nebraska counties provide a natural laboratory for examining the role of institutional ecosystems in shaping rural livability. The combination of rural dominance, institutional uniformity, data availability, and structural constraints makes this setting partic-

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ularly well-suited to analyzing how changes in nonprofit–government relationships influence resilience-based measures of well-being. In contexts like Nebraska, we propose the following hypothesis:

H_1: The more balanced the relationship between nonprofits and local governments, the better they will be able to stimulate improvements in county-level resilience.

Additionally, given the acknowledged deficiency in developing local capacities in rural communities, we identify several issues: smaller tax bases, ineffective tax collection, increased reliance on intergovernmental transfers, and higher costs of local service provision (Oates, 1999; Decker et al., 2024). In a context like Nebraska, which has a substantial number of rural areas, we expect that:

H_2: In rural areas, the improvements in resilience from balancing nonprofit and local government relationships will be less significant than in non-rural regions.

3. METHODS AND DATA

The analysis uses the three years for which the BRIC resilience indicators are produced—2010, 2015, and 2020—which determine the structure of the panel. We use first-difference estimates that relate five-year changes in institutional balance to five-year changes in resilience, pooling the 2010–2015 and 2015–2020 changes rather than estimating period-specific effects. A five-year differencing window is appropriate on substantive grounds: the effects of institutional change on community outcomes are unlikely to be immediate, and shifts in nonprofit capacity, government spending, or interorganizational relationships may take several years to register in underlying social, economic, and infrastructure conditions.

This window is also substantively meaningful. It opens in the recovery following the 2007–2009 recession—a period in which local governments faced revenue volatility and nonprofits experienced shifts in funding and service demand, conditions under which institutional ecosystems were likely to reconfigure (Maher et al., 2020)—and it spans an era of evolving development paradigms in which amenities, services, and community attributes have taken on a more central role, consistent with Deller (2021) "fourth wave." This shift is especially relevant for rural areas, where traditional growth strategies have been less effective and livability has become a central policy focus.

The use of first-difference across these periods addresses concerns about unobserved heterogeneity and structural differences among counties. By focusing on changes within counties over time, the analysis controls for time-invariant factors such as geography, historical development patterns, and baseline institutional structures. This approach is particularly important in rural contexts, where structural differences across counties are substantial and may confound cross-sectional analyses. Taken together, the timeframe provides a theoretically grounded and empirically appropriate basis for examining how changes in institutional ecosystems are associated with changes in livability-related resilience.

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3.1. Operationalization of Variables

3.1.1. Dependent Variable

Our dependent variable is operationalized by employing the Baseline Resilience Indicators for Communities (BRIC). The BRIC's goal is to identify community resilience, primarily to natural hazards (Hazards Vulnerability and Resilience Institute, 2025). Specifically, community resilience refers to "the ability of a community to plan for, absorb, recover from, and more successfully adapt to adverse events", encompassing "multiple facets, ranging from the assets within a community to interactions between different sectors and constituencies" (Hazards Vulnerability and Resilience Institute, 2025, p. 2).

This index considers six broad categories of resilience, so-called Capitals, at the county level to measure community resilience: social, economic, community capital, institutional, infrastructural, and environmental. Each capital comprises a set of common variables that facilitate comparisons between and within communities and represent community resilience using an additive, equal-weighting approach, drawing on data from well-known, publicly available sources such as the US Census Bureau's American Community Survey (ACS 5-Year) and Census County Business Patterns (CBP). Overall, BRIC is used to determine the specific drivers of community resilience for counties and to monitor improvements in resilience over time.

BRIC is known as "the most replicated quantitative method of measuring resilience" (Camacho et al., 2023) (Hazards Vulnerability and Resilience Institute, 2025, p. 2). It has been used in wildfire risk assessments (Morgan et al., 2024), spatial disparities in public health crises such as the pandemic (Jackson et al., 2021), and, more recently, to explore the effects of community resilience on local fiscal health (Hwang et al., 2026).

BRIC classifies counties into those with the lowest and highest community resilience scores by computing 50 variables, standardizing and averaging them, thereby producing the six aforementioned capital scores, each ranging from 0 to 1. These scores are summed to calculate the Overall BRIC, which ranges from 0 to 6 and represents a continuum of community resilience from low to high. The BRIC's internal reliability is acceptable, as its Cronbach's Alpha is over 0.65, as documented recently (Hazards Vulnerability and Resilience Institute, 2025).

As mentioned, BRIC conceptualizes resilience as a multidimensional construct composed of six forms of community capital. The *Social Capital* dimension captures demographic and human-capital characteristics that influence a community's adaptive capacity, including age structure, educational attainment, English-language proficiency, access to health insurance, and communication capacity. *Economic Capital* reflects the strength and diversity of local economic resources through indicators such as business composition, employment levels, homeownership rates, gender income equality, and racial and ethnic income disparities.

The *Community Capital* dimension measures civic engagement and social connectedness through indicators such as the density of civic and religious organizations, volunteer participation, including Red Cross volunteers, and levels of political engagement. *Institutional Capital* assesses the capacity of local institutions to prepare for, respond to, and recover from adverse events through measures such as crop insurance coverage, prior disaster as-

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sistance experience, disaster preparedness training, mitigation expenditures, and the degree of political and jurisdictional fragmentation. *Infrastructure* and *Housing Capital* captures the availability and quality of physical systems that support community functioning, including evacuation routes, broadband access, medical care capacity, and temporary housing resources. Finally, *Environmental Capital* reflects the capacity of natural systems to mitigate risk and support recovery through indicators such as energy and water efficiency, local food production, and the presence of natural flood-buffering resources.

One of the main limitations of using BRIC is its reliance on the American Community Survey, which is a 20 percent annual sample survey with a margin of error acceptable at the county scale. Additionally, changes in BRIC within one community may have spillover effects on other communities that are not accurately captured by the indicators (Hazards Vulnerability and Resilience Institute, 2025). County-level BRIC (CBRIC) is available for 2010, 2015, and 2020 across the U.S.

3.1.2. Explanatory Variables

Our primary explanatory variable captures the degree of balance between local government and nonprofit resource commitments to local service provision. This measure is grounded in theories of complementary relationships between government and nonprofit organizations, which emphasize that governments often provide financing and regulatory oversight, while nonprofits contribute local knowledge, flexibility, and service delivery capacity (Young, 2006). Governments frequently rely on nonprofits to meet community needs, particularly in jurisdictions facing fiscal or administrative constraints (Lipsky and Smith, 1989; Salamon, 2002).

At the same time, nonprofit–government relationships are not always complementary. Government resources frequently flow through nonprofits in the form of grants and contracts that may include categorical restrictions, reporting requirements, and matching provisions. These arrangements can create administrative burdens, encourage mission drift, or crowd out locally identified priorities (Salamon, 1987; Oates, 1999; Eikenberry and Kluver, 2004; Van Slyke and Newman, 2006; Gazley and Brudney, 2007). Consequently, local service systems may exhibit varying degrees of balance between nonprofit and governmental resource commitments.

To capture this balance, we construct the *Public–Nonprofit Balance (PNB)* index. The measure is based on two indicators: nonprofit revenues per capita and local government social expenditures per capita. Both monetary variables are first converted to constant dollars and standardized as z-scores with a mean of zero and a standard deviation of 1. We then compute a balance gap for county i in year t:

$$BG_{it} = |\text{socialngopc}_{it} - \text{govsocialpc}_{it}| \tag{1}$$

Where *socialngopc* is the standardized non-profit revenue per capita and *govsocialpc* is the standardized local government social expenditures. Absolute value captures the magnitude of imbalance regardless of whether nonprofit or governmental resources dominate. We then rescale the balance to compute the PNB for county i in year t as follows:

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$$PNB_{it} = 1 - \frac{BG_{it} - \min(BG_t)}{\max(BG_t) - \min(BG_t)} \tag{2}$$

Higher values, closer to 1, indicate greater balance between nonprofit and governmental resource commitments, whereas lower values indicate greater asymmetry. Importantly, PNB should not be interpreted as a direct measure of collaboration. Rather, it captures the degree to which nonprofit and governmental resource commitments are balanced within a county. Low values may reflect substitution between sectors, differing local preferences regarding service provision, disparities in fiscal capacity, or organizational constraints affecting either sector. One major concern raised regarding the construction of this composite index is that neither county fiscal data nor IRS Form 990 data allows us to identify transfers from local governments to specific nonprofit organizations.

As a benchmark measure, we also construct a *Local Capacity Index (LCI)*. Following recent work on local governmental and community capacity (Aldag et al., 2025), we conceptualize capacity as the combination of organizational, fiscal, and structural resources available within a jurisdiction. The index incorporates four components: nonprofit density (number of nonprofits per 100,000 residents), nonprofit assets per capita, property tax revenues per capita, and the reserve ratio (net fund balance relative to total expenditures). Each component is standardized within a year, and the index is calculated as:

$$LCI_{it} = \frac{z(\text{NGOdens}_{it}) + z(\text{NGOassets}_{it}) + z(\text{PropertyTax}_{it}) + z(\text{ReserveRatio}_{it})}{4} \tag{3}$$

Higher values indicate greater nonprofit, fiscal, and organizational capacity within a county. Unlike PNB, which captures the relative balance of nonprofit and governmental resource commitments, LCI captures the overall stock of local institutional resources available to support resilience-building activities.

Our moderator is *rurality*, measured using the four-category rural–urban continuum employed by the University of Nebraska at Omaha's Center for Public Affairs Research (CPAR). This classification groups counties into core metropolitan (1), outlying metropolitan (2), micropolitan (3), and rural (4) categories, capturing a gradual transition from more urban to more rural contexts. To facilitate interpretation of the interaction terms in our regression models, we center the rurality variable around its mean for Nebraska.

We treat rurality as a moderator because the relationship between public–nonprofit balance and community resilience is expected to vary across the rural–urban continuum. Metropolitan and rural counties differ systematically in nonprofit organizational density, fiscal capacity, administrative resources, service demand, and access to public and private institutions. These contextual differences may shape the extent to which balanced nonprofit and governmental resource commitments translate into resilience outcomes. Consequently, we expect the benefits of institutional balance to differ across levels of rurality rather than to remain constant across all counties.

Finally, we include several control variables that capture local socioeconomic conditions that may influence both resource availability and resilience outcomes (Maher et al., 2023). Poverty rates and population density are included as measures of social and demographic

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pressures, while median income serves as an indicator of local economic conditions. Together, these controls help account for variation in local demand for services that may affect both nonprofit and governmental resource commitments.

The distinction between *PNB* and *LCI* is central to our empirical strategy. While PNB measures the relative balance of nonprofit and governmental resource commitments, LCI captures the overall stock of nonprofit, fiscal, and organizational resources available within a county. This distinction allows us to assess whether resilience is more strongly associated with balanced resource allocation across sectors or with the absolute level of local institutional capacity. By incorporating both measures, we can separate the effects of resource balance from those of resource availability.

3.1.3. First-differenced Estimator

In this paper, we employ the Ordinary Least Squares (OLS) first-difference estimator, a panel data technique used to address omitted variable bias. It avoids bias associated with unobserved, time-invariant variables by using variation across observations over time. In other words, the unobserved effect is eliminated (Wooldridge, 2021) through the first-differenced equation outlined below:

$$\Delta Y_i = \delta_0 + \beta_1 \Delta x_i + \beta_2 \Delta z_i + \Delta u_i \tag{4}$$

Where Δ denotes the change from year=2010 to year=2015 and year=2015 to year=2020. Our dependent variable Y_i represents the set of BRIC capitals, including the overall, described above. Our main explanatory variable, denoted by x, is PNB, the balance between nonprofits and local governments in county i. We include the LCI instead of PNB in Table 3. The variable z encompasses the set of control variables (poverty, density, and median income). The error u is the idiosyncratic, or time-varying, error, since it captures unobserved factors that change over time and affect our dependent variables. The assumption is that Δu is uncorrelated with the explanatory variables included in our first-differenced equation. The OLS estimator β is known then as the first-differenced estimator (Wooldridge, 2021).

To compare our baseline results, we estimate simple year-fixed effects and include several specifications, such as non-linearity in our main explanatory variable (Squared PNB), lagged explanatory variables (t-1), and an estimation combining these two specifications. These estimators allow us to discuss whether the effects of PNB are dynamic, non-linear, or respond to pre-BRIC conditions.

3.1.4. Data

The BRICs are derived from the McCausland College of Arts and Sciences at the University of South Carolina. Economic information from social nonprofits in Nebraska was gathered, cleaned, and processed by the Center for Public Affairs Research at the University of Nebraska at Omaha (UNO), utilizing three IRS formats: 990(c)(3) for nonprofit organizations recognized as tax-exempt, 990(c)(3) filled by private foundations, and 990-EZ for nonprofits with annual gross receipts less than $200,000 and assets less than $500,000. Fiscal data at

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the county level is sourced from the UNO Nebraska State and Local Financial Lab, which collected and cleaned information from financial statement forms. Additionally, population figures, poverty rates, and median income statistics were obtained from the U.S. Census Bureau's American Community Survey. To distinguish between rural and non-rural areas, we used the classification employed by CPAR to analyze Nebraska counties.

4. FINDINGS

4.1. Descriptive Statistics

Table 1 presents descriptive statistics for the study variables across Nebraska counties for 2010, 2015, and 2020. Counties averaged a BRIC score of 3.0, approximately half of the maximum possible resilience score of 6. Among the six BRIC capitals, Social Capital exhibits the highest average value (0.70), while Housing Capital records the lowest (0.38). Considerable variation exists across counties, particularly for Institutional Capital, which displays the greatest dispersion among the BRIC dimensions, suggesting substantial differences in local administrative, fiscal, and organizational capacity.

The *PNB* index is constructed from standardized and rescaled nonprofit revenues and county social expenditures. On average, nonprofit revenues amounted to $861 per capita[1], compared with $316 per capita in county social expenditures[2]. Both indicators exhibit substantial variation across counties, with social expenditures displaying especially large disparities. As a benchmark measure, the *LCI* incorporates standardized variables, including the logarithms of nonprofit density, nonprofit assets, and property tax capacity, as well as fiscal reserves. Nebraska counties averaged approximately 164 nonprofits per 100,000 residents, nonprofit assets of $1,910 per capita, property tax revenues of $262 per capita, and reserve balances equal to roughly 39 percent of total expenditures.

The control variables further illustrate the diversity of county conditions across the state. Poverty rates averaged 11 percent but ranged from 3 percent to 31 percent. Median income averaged $20,597 (in constant 1982–84 dollars), with values ranging from $12,858 to $32,089. Population density varied dramatically across counties, from fewer than one person per square mile to nearly 1,800 persons per square mile, underscoring the substantial heterogeneity that characterizes Nebraska's rural–urban continuum.

The context of this study is Nebraska, a predominantly rural state. According to U.S. Census Bureau classifications, 61 of Nebraska's 93 counties are entirely rural, and approximately 27 percent of the state's population resides in rural census blocks[3]. Figure 1 displays

[1]One county-year observation (Arthur County, 2020) reported negative nonprofit revenue. Inspection of the underlying IRS filings revealed that the county contained a single reporting nonprofit, whose reported total revenue was negative for that year. Because this observation reflects the original IRS data and sensitivity analyses excluding the county did not alter the substantive findings, it was retained in the analysis. Arthur is a rural County.

[2]Furnas County reported no social expenditures in 2010 and 2020. Furnas is a rural County.

[3]The U.S. Census Bureau does not provide a specific definition for rural populations. Instead, it defines urban areas after each decennial census using specific criteria based on census data and other sources. Consequently, rural areas encompass all populations, housing, and territories that are not classified as urban. For the most recent census, the 2020 Census, an "urban area" is defined as a densely settled core of

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Table 1: Descriptive Statistics

Variable	N	Mean	SD	Min	Max
BRIC Overall	279	3.00	0.35	2.53	4.04
BRIC Social	279	0.70	0.05	0.54	0.92
BRIC Economic	279	0.49	0.08	0.27	0.77
BRIC Housing	279	0.38	0.12	0.20	0.74
BRIC Community	279	0.47	0.12	0.24	0.92
BRIC Institutional	279	0.43	0.13	0.03	0.86
BRIC Environmental	279	0.54	0.05	0.33	0.86
Nonprofit revenue per capita (82–84=100)	279	861.00	1186.00	−23.00	6963.00
Nonprofit assets per capita (82–84=100)	279	1910.00	2759.00	0.00	25471.00
County social expenditures per capita (82–84=100)	279	316.00	670.00	0.00	4154.00
Property tax per capita (82–84=100)	279	261.77	136.71	75.04	840.82
Reserve ratio (net fund reserves / total expenditures)	279	0.39	0.14	0.11	0.81
Nonprofits per 100,000	279	163.76	92.42	0.00	587.37
Population Density	279	44.29	189.92	0.50	1790.80
Poverty Ratio	279	0.11	0.04	0.03	0.31
Median Income (82–84=100)	279	20597.00	2960.00	12858.00	32089.00

Source: own elaboration.

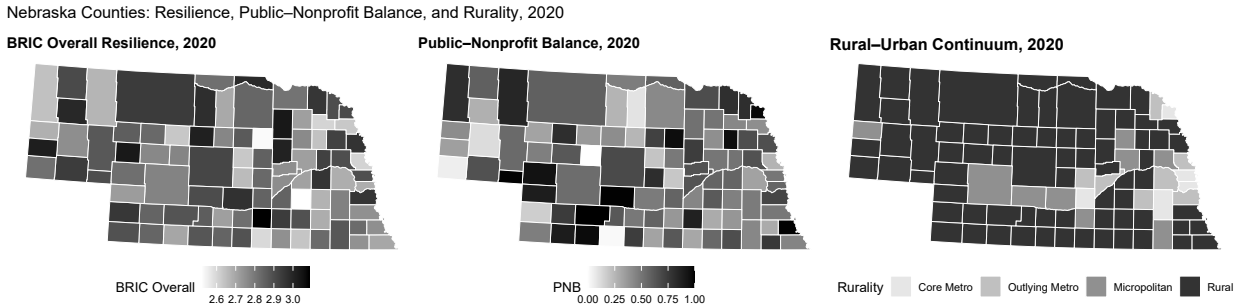
the spatial distribution of overall BRIC resilience, public–nonprofit balance (PNB), and rurality across Nebraska counties in 2020.

Several descriptive patterns emerge from the maps. First, many metropolitan counties—including Douglas, Lancaster, Dakota, and Lincoln—exhibit relatively high levels of both resilience and public–nonprofit balance. This pattern is consistent with stronger nonprofit sectors, larger local governments, and greater administrative and fiscal resources. Second, the maps suggest substantial variation among rural counties. For example, Cheyenne County appears to combine relatively high resilience with high levels of public–nonprofit balance despite its rural location. By contrast, counties such as Sioux and Sheridan exhibit comparatively high levels of institutional balance but lower resilience scores. These examples suggest that balanced commitments of nonprofit and governmental resources may be associated with resilience, but that balance alone is not sufficient to explain resilience outcomes. Other local factors, including economic conditions, demographic characteristics, and institutional

census blocks that meet minimum requirements for housing or population density. Census blocks are the smallest units for which the Census Bureau collects and tabulates information during the decennial census. To qualify as an urban area, the territory must contain at least 2,000 housing units or have a population of at least 5,000. See more technical information at https://www.census.gov/programs-surveys/geography/guidance/geo-areas/urban-rural.html.

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Figure 1: Nebraska Counties: Resilience, Public–Nonprofit Balance, and Rurality 2020



Source: Own elaboration. County boundaries are from the U.S. Census Bureau TIGER/Line shapefiles accessed through the tigris R package. BRIC, PNB, and rurality values are the authors' calculations from the study dataset. Maps were produced in R using sf, tigris, ggplot2, and patchwork.

capacity, may also shape community resilience.

More broadly, the maps indicate that neither resilience nor public—nonprofit balance follows a simple rural–urban pattern. Instead, considerable heterogeneity exists within both metropolitan and rural counties, underscoring the importance of examining how the dynamics behind the relationship between institutional balance and resilience vary across the rural–urban continuum.

4.2. Baseline Results

The baseline results in Table 2 indicate that increases in public–nonprofit balance (ΔPNB) are associated with improvements in most dimensions of community resilience. The estimated coefficients are positive and statistically significant for Social, Economic, Housing, and Community capital, as well as for the overall BRIC index. The strongest effects are observed for Housing Capital and the Overall Resilience Index. These findings are consistent with the theoretical expectation that balanced commitments of nonprofit and governmental resources facilitate the provision of locally delivered, coordination-intensive services.

In contrast, Institutional Capital is not significantly associated with changes in public–nonprofit balance, while Environmental Capital exhibits a small but statistically significant negative relationship. This result is not entirely unexpected. The environmental dimension of BRIC encompasses factors such as water and energy efficiency, local food systems, and natural flood-buffering capacity, which are largely determined by physical geography, land-use patterns, and environmental conditions rather than by the balance of local service provision. Consequently, there is little theoretical reason to expect public–nonprofit balance to directly influence environmental resilience.

More specifically, at the average level of rurality, greater movement toward institutional

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balance is associated with increases of approximately 0.05 points in Social Capital, 0.06 points in Economic Capital, 0.25 points in Housing Capital, 0.23 points in Community Capital, and 0.58 points in the Overall Resilience Index. By contrast, improvements in the public–nonprofit balance are associated with a modest 0.07-point decline in Environmental Capital.

Interacting public–nonprofit balance with rurality yields substantial heterogeneity across the rural–urban continuum. The interaction term is negative and statistically significant for Economic, Housing, Community, Institutional, and Overall resilience, indicating that the benefits associated with greater public–nonprofit balance diminish as counties become more rural. For the Overall Resilience Index, the interaction coefficient (−0.632) is larger in magnitude than the corresponding main effect (0.581), suggesting that the positive association between balance and resilience is largely attenuated among the most rural counties. The only exception is Environmental Capital, where the interaction term is positive and marginally significant, implying that environmental benefits associated with balanced resource allocation between local governments and nonprofits are more likely to emerge in rural settings.

Among the control variables, poverty is consistently associated with lower resilience, particularly for Housing Capital, Community Capital, and the Overall Resilience Index. Changes in median income, measured as the first difference of its logarithm and interpreted as income growth, are positively associated with Economic and Institutional Capital. Population density exhibits no consistent relationship with resilience outcomes.

Overall, the results suggest that a balance of nonprofit and governmental resources is positively associated with resilience outcomes, but that these benefits vary substantially across resilience dimensions and along the rural–urban continuum. Across specifications, the adjusted R^2 ranges from 0.05 for Social Capital to 0.24 for Economic Capital, while the overall model explains approximately 21 percent of the variation in county resilience.

Table 2: Baseline Results

	Social	**Economic**	**Housing**	**Community**	**Institutional**	**Environment**	**Overall**
Δ PNB	0.054*	0.063*	0.245***	0.227***	0.064	−0.072***	0.581***
	(0.022)	(0.027)	(0.046)	(0.042)	(0.044)	(0.020)	(0.120)
Rurality continuum (centered)	0.003	0.032***	−0.010	−0.024*	0.038**	−0.006	0.034
	(0.006)	(0.008)	(0.013)	(0.012)	(0.013)	(0.006)	(0.034)
Δ PNB × Rurality	−0.055	−0.104*	−0.180*	−0.172*	−0.180**	0.058+	−0.632***
	(0.034)	(0.043)	(0.072)	(0.066)	(0.069)	(0.031)	(0.188)
Δ Poverty	−0.242+	−0.344*	−0.671*	−0.702**	−0.164	0.043	−2.080**
	(0.128)	(0.160)	(0.270)	(0.247)	(0.257)	(0.114)	(0.702)
Δ Log median income	0.002	0.129*	−0.004	0.073	0.170+	−0.028	0.343
	(0.045)	(0.057)	(0.096)	(0.087)	(0.091)	(0.041)	(0.249)
Δ Population density	−0.001	0.007	0.003	0.006	0.008	0.000	0.024
	(0.003)	(0.004)	(0.007)	(0.007)	(0.007)	(0.003)	(0.019)
Intercept	−0.023***	−0.052***	−0.104***	−0.101***	−0.035***	0.031***	−0.284***
	(0.005)	(0.006)	(0.011)	(0.010)	(0.010)	(0.005)	(0.028)
Num.Obs.	185	185	185	185	185	185	185
R^2	0.076	0.267	0.179	0.210	0.181	0.109	0.236
R^2 Adj.	0.045	0.243	0.152	0.183	0.154	0.079	0.211

Note: Standard errors in parentheses. Statistical significance reported *** p<0.001, ** p<0.01, * p<0.05, + p<0.1.

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4.3. Robustness Check of Our Baseline Results

We estimated several additional specifications to assess the robustness of our baseline findings. First, our year-fixed-effects estimators (see Appendix 1A) produced coefficients for our PNB variable that were not statistically significant for most capitals, including the overall BRIC. The negative and statistically significant effect on environmental capital remains at the 10% level, while the interaction with rurality shows even worse outcomes as public–nonprofit balances shift in Economic and Institutional capitals. It is worth noting that, in contrast, greater institutional alignment improves resilience in Community capital (at the 1% level) and Environmental capital (at the 10% level).

Overall, the lack of significance of PNB across the capitals and the overall resilience when controlling for year-fixed effects confirm one of the main arguments of this paper: the effects of moving toward a public–nonprofit balance may have dynamic implications for resilience. In other words, more balanced counties are not systematically more resilient, but when their efforts to become more balanced pay off, they tend to experience improvements in resilience.

Furthermore, the estimators with non-linear specifications, via Δ PNB Squared in Appendix 2A, are mostly consistent with our baseline results in Table 2, showing no significant effects on our exponential main explanatory variable. Including lagged dependent variables in Appendix 3 for BRICs obscures the effects of institutional alignment, as the variations may be responding to the previous resilience status of the countries, with no difference regarding rurality. Together, lagged dependent variables and potential non-linearities, as shown in Appendix 4, indicate an expected positive effect on housing capital (at the 5% level), which increases exponentially (as seen in the Δ PNB Squared coefficient at the 5% level) and is attenuated in rural counties (at the 10% level).

4.4. Exploring the Effects of Local Capacity on Resilience

The same first-difference estimator was employed to explore the effects of the local capacity index on resilience. In Table 3, the composite of nonprofit density, nonprofit assets, property tax, and reserves is not significant for any of the capitals, nor for the overall BRIC. Unlike using PNB, basing variations in resilience on the institutional ecosystem's scale/capacity—the standardized stock of organizations, assets, taxing capacity, and reserves—suggests that changes in that capacity are not associated with changes in resilience. Furthermore, the interaction of local capacity with rurality, Δ Local Capacity × Rurality, is also consistent, yielding negative and significant coefficients for Economic capital (−0.086 at the 1% level), Housing capital (−0.108 at the 5% level), and overall resiliency (−0.253 at the 10% level). The control variables exhibit a pattern similar to our baseline results: poverty is negatively associated with resilience across most capitals, including overall BRIC, while median income is positively associated with economic and institutional capitals.

Compared to our baseline results, balance appears more important than capacity, as changes in the alignment of nonprofits and local government efforts are associated with more resilience changes than institutional resource stocks, confirming our H_1. However, even though local capacity has no significant effect on resilience, the little association that exists is further dampened in rural areas, consistent with our baseline findings and thus with

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H_2. Across specifications, the adjusted R^2 ranges from 0.046 for Social Capital to 0.29 for Economic Capital, while the overall model explains 13 percent of the variation in county resilience, a figure that is lower than our baseline results.

Table 3: Effects of Local Capacity on Community Resilience

	Social	Economic	Housing	Community	Institutional	Environmental	Overall
Δ Local capacity	−0.006	−0.017	0.010	0.032	−0.009	0.000	0.010
	(0.013)	(0.016)	(0.029)	(0.027)	(0.027)	(0.012)	(0.076)
Rurality continuum (centered)	0.006	0.035***	−0.005	−0.018	0.051***	−0.007	0.062+
	(0.006)	(0.007)	(0.014)	(0.013)	(0.012)	(0.005)	(0.035)
Δ Local capacity × Rurality	−0.019	−0.086**	−0.108*	−0.077	−0.012	0.050*	−0.253+
	(0.024)	(0.029)	(0.053)	(0.049)	(0.048)	(0.021)	(0.138)
Δ Poverty	−0.238+	−0.337*	−0.717*	−0.758**	−0.167	0.059	−2.158**
	(0.129)	(0.155)	(0.284)	(0.262)	(0.260)	(0.115)	(0.742)
Δ Log median income	0.017	0.163**	0.032	0.093	0.195*	−0.041	0.458+
	(0.046)	(0.056)	(0.102)	(0.094)	(0.093)	(0.041)	(0.267)
Δ Population density	−0.001	0.008+	0.004	0.006	0.008	0.000	0.025
	(0.004)	(0.004)	(0.008)	(0.007)	(0.007)	(0.003)	(0.021)
Intercept	−0.026***	−0.055***	−0.119***	−0.115***	−0.040***	0.035***	−0.320***
	(0.005)	(0.006)	(0.011)	(0.010)	(0.010)	(0.004)	(0.029)
Num.Obs.	186	186	186	186	186	186	186
R^2	0.046	0.294	0.065	0.086	0.151	0.074	0.132
R^2 Adj.	0.014	0.270	0.033	0.056	0.122	0.043	0.103

Note: Standard errors in parentheses. Statistical significance reported *** p<0.001, ** p<0.01, * p<0.05, + p<0.1.

5. DISCUSSION

This study examines how changes in local institutional ecosystems—specifically the balance of effort and the level of capacity across nonprofit and local government activity—are associated with changes in the capital foundations of rural livability. The results provide clear and consistent evidence that institutional balance emerges as a stronger driver than institutional scale in improvements in resilience-based measures of livability, supporting Hypothesis H_1.

In the baseline models, increases in PNB are positively associated with changes in social, economic, housing, community, and overall resilience; as the robustness checks show, this association reflects the payoff to movement toward balance rather than a stable cross-sectional advantage of already-balanced counties. By contrast, changes in LCI—the stock of nonprofit, fiscal, and organizational resources—show no statistically significant association with resilience, reinforcing the conclusion that the balance of effort across sectors, rather than the level of resources, drives improvements in resilience. At the same time, the benefits of institutional balance are systematically attenuated in rural counties, suggesting that the translation of institutional alignment into improved outcomes is constrained by structural factors. At the average level of rurality, a one-unit increase in ΔPNB is associated with roughly a 0.58-point gain in the overall BRIC index; however, the negative rural interaction (−0.632) is large enough to offset most of that gain among the most rural counties.

The most important finding of this study is the distinction between institutional scale and institutional alignment. Much of the existing literature implicitly assumes that greater institutional capacity—whether measured through public expenditures, nonprofit revenues,

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or organizational density—should lead to improved community outcomes. The results presented here refine this assumption. When institutional scale is measured directly through the LCI index, changes in capacity show no significant association with resilience, whereas changes in institutional balance do. This suggests that capacity alone is insufficient; how institutional effort is structured and coordinated plays a more central role in shaping community outcomes.

One dimension departs from this pattern. Public–nonprofit balance is negatively associated with environmental capital, and the rural interaction for that dimension reverses sign—the mirror image of the other capitals. This is theoretically unsurprising: BRIC's environmental dimension reflects water and energy efficiency, local food systems, and natural flood-buffering capacity, which are governed by physical geography and land use rather than the balance of local service provision. The result is best read not as evidence against the alignment thesis but as a reminder that institutional coordination operates on the socially produced capitals—social, economic, housing, and community—rather than on the natural-systems dimension of resilience.

From a community capital perspective, institutional balance may enhance livability by improving the efficiency and effectiveness with which resources are translated into social, economic, and infrastructure capacity. Balanced systems may reduce duplication of effort, improve service coordination, and better match resources to local needs. In contrast, imbalanced systems—where one sector dominates—may reflect either gaps in provision or inefficiencies that limit the translation of resources into outcomes. This interpretation suggests that institutional balance serves as a structural proxy for coordination within local service systems.

The relationship between institutional scale (LCI) and resilience warrants careful interpretation. The robustness results indicate no significant independent association between local capacity and resilience, in contrast to the consistent associations observed for institutional balance. One explanation is that institutional scale captures both capacity and need, which may offset one another in empirical analysis. For example, higher levels of nonprofit revenue or government spending may reflect greater demand for services rather than improved capacity. In such cases, increases in scale may not correspond directly to improvements in underlying conditions.

Another explanation is that increases in scale without corresponding improvements in coordination may lead to diminishing returns. As suggested by the collaboration literature, greater activity can increase complexity, coordination costs, and administrative burden, potentially offsetting gains from additional resources. This interpretation is consistent with findings from public–private partnership research, which emphasizes that poorly aligned systems can underperform despite substantial investment. Taken together, these findings suggest that institutional scale is a necessary but not sufficient condition for improving livability. Without alignment across sectors, increases in capacity may not translate into meaningful improvements in community outcomes.

A second key finding is that the positive relationship between institutional balance and resilience is significantly weaker in rural counties, which also may confirm our Hypothesis H_2. This result highlights the importance of spatial context in shaping the effectiveness of institutional ecosystems and provides important insight into the challenges of rural livability.

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Several factors may explain this attenuation effect. First, rural communities are characterized by thinner institutional ecosystems, including fewer nonprofit organizations, smaller local governments, and more limited fiscal capacity. These conditions constrain both sectors' ability to provide services and may limit the scope for effective coordination. Even when institutional balance improves, the absolute level of resources may remain insufficient to produce substantial changes in community capital.

Second, rural communities often face higher per capita costs of service delivery due to geographic dispersion and lower population density. These structural constraints can reduce the efficiency of both public and nonprofit provision, limiting the impact of institutional alignment. Third, rural areas may be more dependent on intergovernmental transfers and external funding, which can introduce constraints on how resources are used. Conditional funding requirements and administrative burdens may limit local flexibility and reduce the effectiveness of coordinated efforts. These mechanisms echo findings from comparative work on collaborative service delivery in under-resourced settings. Studying civil society–municipal collaboration in Peru, de la Riva Agüero (2026) demonstrates that municipal collaboration management capacity is a precondition for partnerships to improve performance, and that structural complexity raises the capacity required for collaboration to succeed. Read alongside our results, rurality functions much like service complexity: it raises the capacity threshold at which institutional balance translates into resilience gains, helping to explain why the benefits of balance attenuate in the most rural counties.

An illustrative example of the mechanisms underlying our argument is Nebraska's recent effort to address the state's digital divide. A relatively recent report Schafer et al. (2023) identifies rural communities as facing multiple, reinforcing barriers to digital inclusion, including limited broadband providers, unstable internet service, affordability constraints, and shortages of organizations capable of delivering technology assistance and digital literacy training. This report emphasizes that these challenges cannot be addressed solely through broadband infrastructure investments; rather, they require coordinated efforts among state and local governments, nonprofit organizations, libraries, and community centers to expand access to devices, provide technology training, and improve digital literacy.

From this study's perspective, Nebraska's digital equity needs illustrate how a public–nonprofit balance may contribute to community resilience. Local governments possess financing authority, planning capacity, and regulatory tools, whereas nonprofit organizations frequently provide localized knowledge, trusted relationships, and direct service delivery through programs such as technology lending, digital literacy training, and community access hubs. Where one sector is absent or substantially weaker than the other, communities (especially the rural ones) may struggle to overcome market failures or coordinate effective responses to local needs. Although this example does not establish causality, it illustrates the broader mechanism tested in our empirical models: resilience may depend not only on the quantity of institutional resources available within a community, but also on the extent to which nonprofit and governmental resource commitments become balanced.

From a fiscal federalism perspective, these findings suggest that limited fiscal autonomy and reliance on external funding may weaken rural institutional systems' ability to respond to local needs. Even when nonprofit and government activity becomes more balanced, the broader institutional environment may constrain the translation of that balance into im-

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proved outcomes. Importantly, the rural attenuation effect does not imply that institutional balance is unimportant in rural contexts. Rather, it suggests that the marginal benefits of institutional alignment are lower in environments with structural constraints. This finding underscores the need to consider both institutional arrangements and underlying capacity when designing policies to improve rural livability.

These findings have important implications for how rural livability is conceptualized and pursued in both research and policy. First, the results support a view of livability as an outcome of institutional ecosystems rather than isolated sectoral activity. Community capitals are not produced solely by government or nonprofit organizations, but by the interaction of these actors within a broader system of resource allocation and service provision. Second, the results suggest that policies aimed at improving livability should focus not only on increasing resources but also on improving coordination and alignment across sectors. Efforts to strengthen partnerships, clarify roles, and reduce administrative barriers may be as important as increasing funding. This aligns with the broader place-making literature, which emphasizes the importance of institutional relationships and community partnerships in shaping local outcomes.

Third, the rural attenuation effect highlights the need for context-sensitive policy approaches. Strategies that are effective in more urban or resource-rich environments may not translate directly to rural settings. In rural areas, improving institutional balance may need to be complemented by efforts to expand capacity, enhance fiscal autonomy, or reduce structural constraints on service delivery. Finally, these findings reinforce the importance of dynamic approaches to studying livability. By focusing on changes over time, this study captures processes of institutional adaptation that are not visible in cross-sectional analyses. This perspective aligns with resilience theory and provides a more nuanced understanding of how communities evolve in response to changing conditions.

While this study provides new insights into the relationship between institutional ecosystems and rural livability, several limitations should be acknowledged. First, the analysis is limited to Nebraska counties, which, while representative of many rural contexts, may not capture the full range of institutional and economic variation present across the United States. Future research could extend this analysis to other states or regions to assess the generalizability of the findings. Second, the measures of institutional ecosystems are necessarily indirect, capturing structural characteristics rather than direct measures of collaboration or coordination. While institutional balance provides a useful proxy for alignment, future research could incorporate more direct measures of interorganizational relationships, such as contracts, partnerships, or network structures.

Third, the use of BRIC as a measure of resilience captures structural capacity but does not directly measure subjective well-being or lived experience. Future studies could integrate subjective measures of quality of life to provide a more comprehensive assessment of livability. Finally, while the first-difference approach strengthens causal inference by controlling for time-invariant factors, it does not fully address issues of endogeneity or reverse causality. Changes in resilience may also influence institutional arrangements, creating potential feedback effects. Future research could explore these dynamics using alternative identification strategies.

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6. CONCLUSION

This study set out to explain not simply whether nonprofit and government activity supports rural livability, but how the structure of that activity shapes community outcomes over time. Using first-difference models across Nebraska counties between 2010 and 2020, it shows that the balance of effort between sectors is a more reliable driver of resilience than the sheer stock of institutional resources, and that this benefit is conditioned by rural context. Institutional alignment, not institutional scale, distinguishes communities that translate resources into resilience from those that do not—and the capacity to realize that alignment is precisely what rural jurisdictions most often lack.

The contribution is threefold. Conceptually, the study introduces and operationalizes a distinction between institutional scale and institutional alignment, offering public–nonprofit balance as a tractable, replicable measure that can be constructed for small and rural governments using publicly available data. Empirically, it shifts attention from static, cross-sectional comparisons toward the dynamics of institutional change, demonstrating that movement toward balance, rather than balance itself, is what pays off in resilience terms. Theoretically, it links the literatures on rural livability, nonprofit–government relations, and collaborative governance, showing—consistent with comparative evidence from other resource-constrained settings—that coordination depends on underlying capacity and that structural context sets the threshold at which coordination becomes effective.

For practice, the message is that strengthening rural livability requires more than additional resources or additional organizations. It requires building the local capacity to coordinate the resources that already exist, aligning the roles of public and nonprofit actors, and recognizing that the most resource-constrained places may need targeted support before alignment can yield its full returns. For research, the findings invite replication across states and service domains, the incorporation of direct measures of interorganizational coordination, and further attention to how rurality and other structural conditions moderate the returns to institutional alignment.

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APPENDIX

Table A1: Levels Models with Year Fixed Effects

	PNB	Rurality	PNB × Rurality	Poverty	Log Income	Pop. Density	Intercept	R^2	R^2 Adj.
Social	−0.004	0.004	−0.011	−0.258***	−0.017***	0.000	0.791***	0.324	0.304
	(0.011)	(0.011)	(0.016)	(0.069)	(0.003)	(0.000)	(0.013)		
Economic	−0.001	0.046**	−0.092***	−0.305**	−0.033***	0.000	0.634***	0.499	0.484
	(0.016)	(0.015)	(0.021)	(0.095)	(0.005)	(0.000)	(0.018)		
Housing	−0.016	0.009	−0.008	−0.072	−0.006	0.000+	0.559***	0.781	0.775
	(0.015)	(0.015)	(0.021)	(0.094)	(0.005)	(0.000)	(0.018)		
Community	−0.006	−0.040**	0.070**	−0.374***	0.004	0.000	0.654***	0.759	0.751
	(0.016)	(0.015)	(0.021)	(0.095)	(0.005)	(0.000)	(0.018)		
Institutional	0.011	0.058*	−0.092*	−0.379*	−0.065***	0.000	0.604***	0.253	0.231
	(0.030)	(0.028)	(0.041)	(0.182)	(0.009)	(0.000)	(0.035)		
Environmental	−0.015+	−0.017*	0.022+	0.058	0.010***	−0.000**	0.489***	0.521	0.507
	(0.009)	(0.008)	(0.012)	(0.054)	(0.003)	(0.000)	(0.010)		
Overall	−0.031	0.059	−0.110	−1.330***	−0.108***	0.000	3.732***	0.688	0.679
	(0.052)	(0.049)	(0.072)	(0.319)	(0.016)	(0.000)	(0.061)		

Note: Standard errors in parentheses. Num.Obs. = 278 across all models. Statistical significance reported *** p<0.001, ** p<0.01, * p<0.05, + p<0.1.

Table A2: First-Difference Models with Nonlinear PNB

	Social	Economic	Housing	Community	Institutional	Environmental	Overall
Δ PNB	0.060*	0.075*	0.283***	0.243***	0.105*	−0.075**	0.692***
	(0.025)	(0.032)	(0.053)	(0.049)	(0.051)	(0.023)	(0.138)
Δ PNB Squared	0.025	0.050	0.153	0.066	0.168	−0.010	0.452
	(0.052)	(0.065)	(0.110)	(0.101)	(0.104)	(0.047)	(0.284)
Rurality continuum (centered)	0.003	0.032***	−0.011	−0.024*	0.038**	−0.006	0.032
	(0.006)	(0.008)	(0.013)	(0.012)	(0.012)	(0.006)	(0.034)
Δ PNB × Rurality	−0.054	−0.103*	−0.175*	−0.170*	−0.175*	0.058+	−0.619**
	(0.034)	(0.043)	(0.072)	(0.066)	(0.069)	(0.031)	(0.188)
Δ Poverty	−0.246+	−0.353*	−0.698*	−0.713**	−0.193	0.045	−2.158**
	(0.128)	(0.161)	(0.270)	(0.248)	(0.257)	(0.115)	(0.700)
Δ Log median income	0.000	0.124*	−0.019	0.066	0.153+	−0.027	0.298
	(0.046)	(0.057)	(0.096)	(0.088)	(0.091)	(0.041)	(0.249)
Δ Population density	−0.001	0.007+	0.003	0.006	0.009	0.000	0.024
	(0.004)	(0.004)	(0.007)	(0.007)	(0.007)	(0.003)	(0.019)
Intercept	−0.023***	−0.053***	−0.108***	−0.103***	−0.040***	0.031***	−0.295***
	(0.005)	(0.007)	(0.011)	(0.010)	(0.010)	(0.005)	(0.029)
Num.Obs.	185	185	185	185	185	185	185
R^2	0.078	0.270	0.188	0.212	0.193	0.109	0.247
R^2 Adj.	0.041	0.241	0.156	0.181	0.161	0.074	0.217

Note: Standard errors in parentheses. Statistical significance reported *** p<0.001, ** p<0.01, * p<0.05, + p<0.1.

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Table A3: First-Difference Models with Lagged BRIC

	ΔPNB	Rurality	ΔPNB × Rur.	ΔPoverty	ΔLog Inc.	ΔPop. Dens.	Lagged DV	Intercept	R^2 / Adj.
Social	−0.014	−0.008**	0.021	−0.091	0.018	−0.003+	−0.929***	0.631***	0.797 / 0.789
	(0.011)	(0.003)	(0.016)	(0.060)	(0.021)	(0.002)	(0.037)	(0.026)	
Economic	0.007	0.002	0.022	−0.065	0.029	0.001	−0.791***	0.350***	0.818 / 0.811
	(0.014)	(0.004)	(0.022)	(0.081)	(0.029)	(0.002)	(0.034)	(0.018)	
Housing	0.022	−0.003	−0.040+	0.013	0.004	0.002	−0.941***	0.280***	0.932 / 0.930
	(0.014)	(0.004)	(0.021)	(0.079)	(0.028)	(0.002)	(0.021)	(0.009)	
Community	0.015	−0.001	−0.003	−0.060	−0.014	0.001	−0.892***	0.345***	0.864 / 0.858
	(0.019)	(0.005)	(0.028)	(0.105)	(0.037)	(0.003)	(0.031)	(0.016)	
Institutional	−0.025	0.005	0.009	−0.184	0.078+	−0.001	−0.743***	0.288***	0.838 / 0.831
	(0.020)	(0.006)	(0.032)	(0.115)	(0.041)	(0.003)	(0.028)	(0.013)	
Environmental	−0.008	−0.001	0.004	−0.049	0.000	−0.001	−0.948***	0.539***	0.907 / 0.904
	(0.007)	(0.002)	(0.010)	(0.037)	(0.013)	(0.001)	(0.024)	(0.013)	
Overall	−0.005	−0.015	0.043	−0.481+	0.087	−0.003	−0.870***	2.405***	0.900 / 0.896
	(0.047)	(0.012)	(0.071)	(0.259)	(0.090)	(0.007)	(0.025)	(0.079)	

Note: Standard errors in parentheses. Num.Obs. = 185 across all models. "Lagged DV" refers to each model's own lagged BRIC capital score. Statistical significance reported *** p<0.001, ** p<0.01, * p<0.05, + p<0.1.

Table A4: First-Difference Models with Nonlinear PNB and Lagged BRIC

	Social	Economic	Housing	Community	Institutional	Environmental	Overall
Δ PNB	−0.014	0.012	0.038*	0.006	−0.026	−0.008	0.003
	(0.012)	(0.016)	(0.016)	(0.022)	(0.023)	(0.008)	(0.054)
Δ PNB Squared	−0.001	0.020	0.064*	−0.032	−0.003	0.003	0.030
	(0.025)	(0.033)	(0.031)	(0.042)	(0.047)	(0.015)	(0.104)
Rurality continuum (centered)	−0.008**	0.002	−0.004	0.000	0.005	−0.001	−0.015
	(0.003)	(0.004)	(0.004)	(0.005)	(0.006)	(0.002)	(0.013)
Δ PNB × Rurality	0.021	0.023	−0.039+	−0.004	0.009	0.004	0.043
	(0.016)	(0.022)	(0.021)	(0.028)	(0.032)	(0.010)	(0.071)
Δ Poverty	−0.091	−0.069	0.000	−0.053	−0.184	−0.049	−0.488+
	(0.061)	(0.081)	(0.079)	(0.106)	(0.115)	(0.037)	(0.260)
Δ Log median income	0.018	0.027	−0.003	−0.010	0.078+	0.000	0.084
	(0.022)	(0.029)	(0.027)	(0.037)	(0.041)	(0.013)	(0.091)
Δ Population density	−0.003+	0.001	0.002	0.001	−0.001	−0.001	−0.003
	(0.002)	(0.002)	(0.002)	(0.003)	(0.003)	(0.001)	(0.007)
Lagged BRIC Social	−0.929***						
	(0.037)						
Lagged BRIC Economic		−0.790***					
		(0.034)					
Lagged BRIC Housing			−0.938***				
			(0.021)				
Lagged BRIC Community				−0.894***			
				(0.031)			
Lagged BRIC Institutional					−0.743***		
					(0.028)		
Lagged BRIC Environmental						−0.948***	
						(0.024)	
Lagged BRIC Overall							−0.869***
							(0.026)
Intercept	0.631***	0.349***	0.277***	0.347***	0.289***	0.539***	2.401***
	(0.026)	(0.018)	(0.009)	(0.016)	(0.013)	(0.013)	(0.080)
Num.Obs.	185	185	185	185	185	185	185
R^2	0.797	0.819	0.934	0.864	0.838	0.907	0.900
R^2 Adj.	0.788	0.811	0.931	0.858	0.830	0.903	0.896

Note: Standard errors in parentheses. Statistical significance reported *** p<0.001, ** p<0.01, * p<0.05, + p<0.1.

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