

## “Why Are You Still Out There?” Persistence among Deep Rural Communities in the Northern Plains

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*Recommended Citation Style:*

Redlin, Meredith, Gary Aguiar, George Langelett, and Gerald Warmann. “Why Are You Still Out There?” Persistence among Deep Rural Communities in the Northern Plains.” The Online Journal of Rural Research and Policy 5.5 (2010): 1-22.

*Key words:* Rural, Northern Plains, Community Persistence, Rural Communities, Great Plains, Enduring Communities, Community Sustainability, Social Networks, Human Capital, Civic Engagement

*This is a peer- reviewed article.*

### **Abstract**

In the face of on-going population loss and despite all dire warnings to the contrary, the clear persistence of certain rural communities continues in unexpected areas of the Great Plains. It is this persistence that is becoming the most difficult element to explain. Thus, this paper turns the traditional research question on its head and asks why some deep rural communities endure. As a result, we introduce a new concept in rural studies—community persistence—and, consequently, we advance a theoretical model to explain why some communities survive without natural amenities or adjacency to a metropolis. Our concept of persistence attempts to answer the question, “why are you still out there?” when most of society has given up on deep rural populations. We offer a sharp distinction between community persistence and the much-discussed concept of *community sustainability*. Moreover, our theory incorporates place-based sociological, economic and political factors associated with community persistence. In particular, our integrated theory suggests that persistent communities develop dense social networks, high human capital and deliberative civic engagement so that these towns stood out from the crowded field of contenders for sub-regional prominence.

Since we are embarking on a long-term investigation about deep rural communities, this paper offers a preliminary analysis using existing data sources. Our unit of analysis is the county and our sample includes all deep rural counties in Montana, North Dakota, and South Dakota. We employ two measures of

persistence: per capita income and civilian labor force. Both our initial analysis of the ten most persistent counties and a more rigorous test of the entire sample indicate a high proportion of college graduates, high population density, and competitive political parties are most closely associated with persistent communities. Our findings suggest that a broad mix of social, economic, and political factors are essential to community persistence in deep rural areas. We connect our findings to rural development policy efforts and also discuss avenues for future studies that build on our theory.

*Development may be defined broadly as higher levels of education, income, health, housing, and political and social participation; it is a social, economic, and political concept expressed in the lives of people in places and regions (Morrill 1993:407<sup>1</sup>).*

## Introduction

Much of the Great Plains as a region of the U.S. has been notable for its on-going loss of population, and purported demise as a socially and/or economically viable area (McGranahan and Beale, 2002<sup>2</sup>; Rathge and Highman, 1998<sup>3</sup>; Frazier, 1989<sup>4</sup>; Mather 1972<sup>5</sup>). Multiple and diverse policy perspectives have been forwarded to stem this loss, and/or revive the socioeconomic character of these communities, but overall success has proven elusive. Recent evidence of the draw of high natural amenity areas includes only a limited portion of the Great Plains. For example, the USDA classifies the Black Hills of South Dakota and the Montana foothills of the Rocky Mountain range as high in natural amenities (McGranahan 1999<sup>6</sup>; Economic Research Service, 2004a<sup>7</sup>). The impact of new migration into these rural high-amenity areas has been explored (Cromartie 1998<sup>8</sup>; McGranahan, 1999<sup>9</sup>; Hunter et al, 2005<sup>10</sup>; Jones et al., 2003<sup>11</sup>). However, most of the Great Plains is not experiencing this growth through in-migration. For deep rural, low-population communities that lack these natural amenities, the future is reported as especially bleak. Despite these findings and dire predictions, some of these deep rural areas not only remain in the landscape but successfully incorporate next generations.

Following Morrill (1993<sup>12</sup>), this paper identifies place-based social, economic and political factors that explain this *persistence* of deep rural populations in the northern Plains. What are the primary and secondary factors in these places that support their resilience economically, politically and socially? Which economic, political and social characteristics are shared by persistent communities in the region? Our present focus is on low population and low natural amenity deep rural communities in South Dakota, North Dakota and Montana. Building on Morrill's modeling of factors that explain development (1993<sup>13</sup>), we advance a theoretical model that more fully incorporates sociological, economic and political factors associated with community persistence. Our ultimate goal is to identify and understand the factors and processes that led to rural development in these communities so that these lessons and principles can be passed on to other communities.

As stated above, the northern Plains have long been decried as dying; a collection of states with on-going population loss and the accompanying gradual erosion of financial, social and political viability (Baltensperger 1983<sup>14</sup>, 1991<sup>15</sup>; Mather 1972<sup>16</sup>; Popper and Popper 1987<sup>17</sup>, 1994<sup>18</sup>,

2001<sup>19</sup>; Frazier, 1989<sup>20</sup>). Strategies to address these losses have been various and variable. For planners and developers, one model proposed for the Great Plains has been the “urban island” model, which identifies and encourages the development of concentrated urban migration in the midst of unpopulated rural space (Adamchak et al. 1998<sup>21</sup>; Rowley 1998<sup>22</sup>). The “urban island” parallels the “gravity model” found in economic literature (discussed below), which concentrates on the economic, political and social viability of the urban over the rural. This theorizing provides minimal to no role for the “rural”—as presently constituted in the region—in the future life of the Plains.

With a different focus, the Buffalo Commons model emphasizes the economic and environmental viability of the natural landscape; the proposed future of entrepreneurial and ecological tertiary sector models for—again—mostly unpopulated rural spaces (Popper and Popper 1999<sup>23</sup>). In its initial form, the Buffalo Commons conceptually eliminated the role of the community in rural areas, although variations on the theme as it has developed retain some sensibility of limited community retention. Many other models have joined these proposals on the continuum—including the more optimistic research surrounding the “new homestead Act” (Senate Bill S.1093, 2007<sup>24</sup>)—but the bottom line of insecure rural survival is rarely if ever challenged.

The realities and repercussions of population loss are felt in many rural areas of North Dakota, South Dakota, and Montana. Indeed these impacts are increasingly seen in the western states of the Midwest as well, including parts of Nebraska, Iowa and Minnesota (Walzer 2003<sup>25</sup>). However, in the northern Plains, the clear persistence of rural communities and populations is also occurring in unexpected areas, despite all dire warnings to the contrary. It is this persistence that is becoming the most difficult element to explain.

In assessing the viability of human populations in the Great Plains, we seek to explain the persistence of certain communities against economic pressures. Our concept of community persistence attempts to answer the question, “why are you still out there?”, when most of society has given up on deep rural communities. Some readers might confuse persistence with *sustainability*. By proposing persistence as a theoretical concept, we clearly distinguish it from sustainability, which generally conjures images of the natural environment. Definitions of sustainability usually refer to intentional community planning to satisfy human needs while avoiding the depletion of natural resources (U.S. Congress, 1990<sup>26</sup>). However, we note that sustainability as a theoretical concept is subject to substantial scholarly disagreement (see Carroll-Larson and Newman 2007<sup>27</sup>). Many researchers rely on various tripartite domains or aspects: economic, environmental, and social/community (Schwarzweiler and Lyson 1995<sup>28</sup>); social, agricultural, and rural (Wimberly 1995<sup>29</sup>); and economic, social, and cultural (Rannikko 1999<sup>30</sup>). One group of scholars even suggests that usage of the term “sustainable rural communities” varies by local context and that the term should be treated as a folk category (Scott et al. 2000<sup>31</sup>).

In sharp contrast, the concept of persistence aims to understand an entirely different phenomenon. We are interested in community responses in their struggles to beat the odds and maintain their presence on the physical landscape. We seek to understand why some communities survive amidst these pressures that have led to the dissolution of neighboring

communities throughout the region (Wood 2008<sup>32</sup>). In particular, under what conditions do younger generations embrace their native-born community by assuming active ownership of their families' businesses, farms, ranches, and homes? Thus, our preliminary investigation uses economic and social indicators to sort deep rural communities that continue to persist in this harsh environment from those communities that have disappeared. For this study, we employ two measures as dependent variables: per capita income and civilian labor force.

Richard Morrill (1993<sup>33</sup>) explored this same issue of rural persistence, albeit at a national level. In his presentation of diverse theoretical considerations, Morrill emphasizes the inclusion of demographic, economic, cultural and political variables to explain persistence in multiple rural areas throughout the nation. He summarized the necessary factors leading to processes of community convergence and development in rural regions in an analytical model (See Fig. 1).

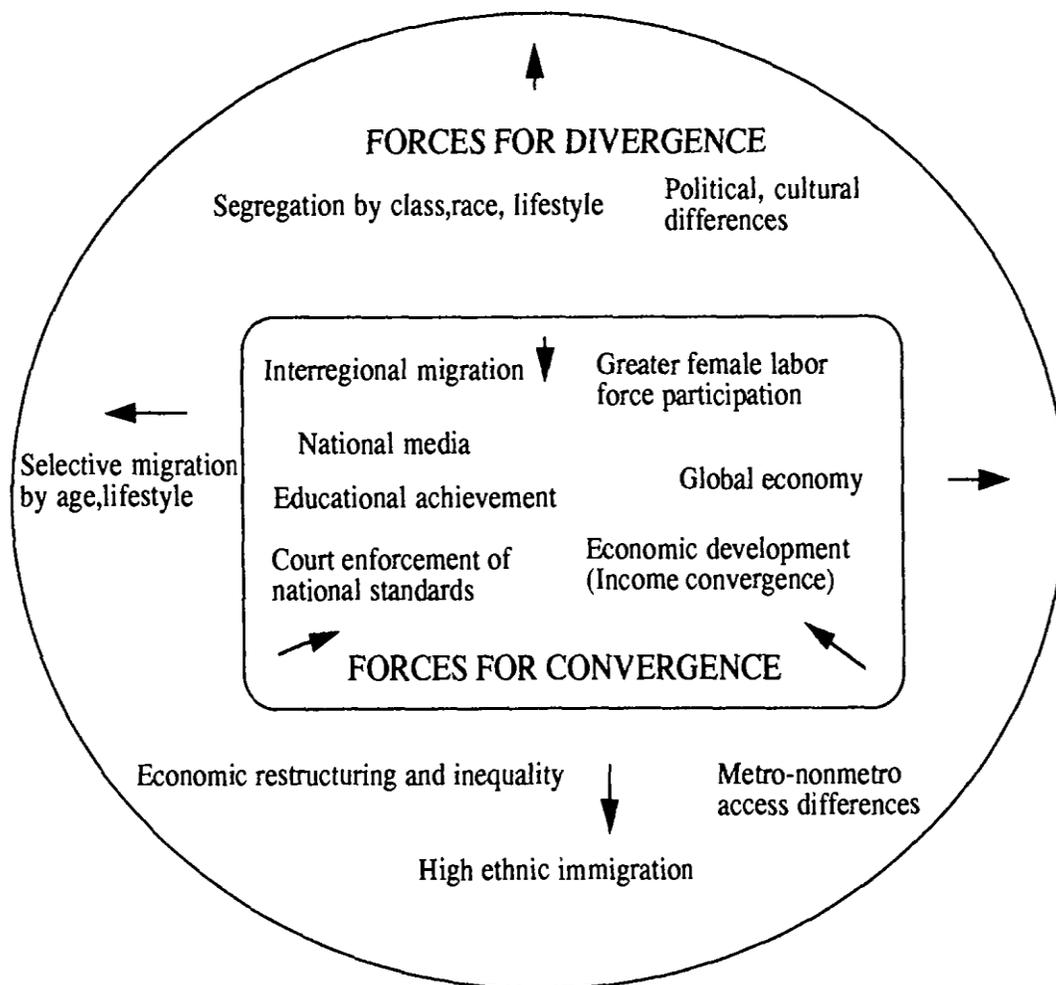


Figure 1: Morrill's Model for Forces of Convergence and Divergence in Demographic Character (1993:411<sup>34</sup>).

Morrill built his model from demographic characteristics and therefore—by his own admission—lacked appropriate variables for close examination and inclusion of the role of such

factors as entrepreneurship and other forms of locally-based small investments, social networking, cultural and political participation that lead to rural community persistence. Although Morrill notes the undoubted importance of common religious belief and/or common history, he is unable to account for those factors adequately with his measures. (However, see Longhofer (1993<sup>35</sup>) for a discussion of the role of religion in Mennonite culture.)

By drawing on the extant literature in multiple disciplines, we build on Morrill's concepts and incorporate some of the following missing elements. From sociology, we include concepts of social networks and place-based cultural identity. From economics, we employ the concepts of the movement of rural economic activity and human capital. Finally, political science research contributes concepts of participation and community engagement in democratic action.

### **Sociological Persistence: Place, Identity and Networks**

The sociological literature most relevant to persistence revolves around conceptualizations of place and identity—of “home” and “culture.” As outlined by Cresswell (2004<sup>36</sup>), rural sociological literature has predominantly emphasized place as both geographically limited and as socially constructed (Morris, 1999<sup>37</sup>). Arguably, especially for the Great Plains European-descendent rural residents, the landscape and the practices they used to insinuate themselves on it constituted both place and identity (Salamon 1992<sup>38</sup>, Baltasperger 1983<sup>39</sup>).<sup>40</sup> In this way, current social action and conventional cultural practices can also be analyzed as discrete entities, although it can be argued that in some ways, this approach to place ignores more recent post-modern and/or phenomenological approaches. That is to say, space and place become much more concretized in this kind of analysis, and, as we argue here, in the social networking and understanding of deep rural residents. Therefore, in this study we adhere to the precepts that place remains geographically driven and socially defined.

With such an understanding of place, activities in place then become the methodological focus and the point of measurement. Therefore, in addition to place and identity, Great Plains communities and residents are also necessarily conceptualized as in networks and inter-relation (Cresswell 2004<sup>41</sup>; Flora, Flora and Fey 2003<sup>42</sup>). The efforts and ingenuity of rural residents in establishing these connections has been greatly assisted by technology, both historically and presently. (See for example Fischer's (1988<sup>43</sup>) work on the “appropriation” of telephone by women in rural areas to connect/acquaint themselves across rural space). However, unlike the “telephone party-line” past which established shared social space within the context of community, much current technology enables social space to expand beyond geography, impacting the nature of “community” for the young especially. At the micro-level of study, then, the nature and number of networks become not merely a matter of connection, but of density (Freudenberg 1986<sup>44</sup>). This can be a key issue in rural areas, as the impact of lack of density in social relationships were not seen (as assumed) in the psychosocial connections of the individual, but rather in the fabric of the community itself. Freudenberg (1986<sup>45</sup>) notes that the crucial impact of community networks—the “density of acquaintanceship”—is found in levels of deviance in communities and in the degree of community watchfulness.

## Economic Persistence: The “Gravity Model” and Human Capital

The economic literature for rural sustainability contains two key concepts: economic vitality and trade as represented in the “gravity model” of economic activity, and human capital operationalization which represents productivity through measures of each individual worker. Together, these concepts form the basis of economic viability.

First, economic research emphasizes the “gravity model” of economic activity connecting rural-urban populations. The Newtonian gravity model specifies that there is a gravitational pull between bodies of matter, and the larger the mass of each body, the greater the attraction. Borrowed from physics, the gravity model has been used by social scientists to explain dynamic behavior between economic bodies. Economists studying international trade have extensively applied the gravity model to provide a framework for modeling natural trade patterns between countries (McCallum 1995<sup>46</sup>, Frankel and Romer 1999<sup>47</sup>, and Frankel and Rose 2002<sup>48</sup>).

The standard Newtonian gravity model specifies trade between paired countries is a positive function of each country’s gross domestic product and a negative function of the distance between countries. The general form of the specified model is:

$$\text{Trade}_{ij} = f [(GDP_i * GDP_j) / \text{Distance}_{ij}]$$

Where: Trade is the dollar value of bilateral trade between countries i and j; GDP is the gross domestic product of countries i and j; and Distance is the spatial distance between the two countries.

Regional economists and sociologists have also applied the gravity model to regional development. In the northern Plains, the behavior of regional centers (e.g., Minneapolis MN, Sioux Falls, SD and Fargo, ND) can be modeled using gravitational pulls. Incentives to attract commerce, known as pull-factors, including retail shopping, business park development, and immigration from rural areas are well documented. While variations of the gravity model are well suited to explain the economic behavior of regional centers in the northern Plains, the conclusions from this model become troublesome. According to the gravitational pull model, pull-factors will create an asymptote-approaching-zero equilibrium level of economic activity for deep rural communities in the long run. The empirical evidence we see in rural communities today contradicts this conclusion to the Newtonian gravity model. Despite the dire predictions of these regional center models, economic activity persists in rural communities throughout the northern Plains.

Second, human capital is the “know how” of the work force that increases the productivity of each worker. The theory of human capital is that investments can be made in human beings, as well as in physical capital, which yield a future stream of returns or dividends to the initial investment. Investment in human capital has been one of the major sources of growth in modern economies during the past century (Langelett 2002<sup>49</sup>).

In 1956, Robert Solow developed an economic growth model in which a country’s stock of physical capital reaches equilibrium and economic growth becomes dependent upon

technological progress. As Schultz (1961<sup>50</sup>) shows, the concept of human capital was embraced by mainstream economics and, indeed, has become a focus of macroeconomics. From 1929 to 1957, the ratio of physical capital to national income continued to decline. This problem raised a fundamental concern because one of the Solow model's major conclusions is that in equilibrium, after accounting for growth in the size of the labor force, this ratio should stay relatively constant over time. Either the Solow growth model, a foundational growth model of neoclassical economics, was wrong, or something else was driving growth. The profession turned to human capital for answers to this mystery. Once human capital was included in total capital, the ratio stayed constant, and this mystery was solved. As Kendrick (1984<sup>51</sup>) pointed out, by Schultz's estimation, the human capital stock in 1969 was greater than the physical capital stock for the United States.

Mankiw and colleagues (1992<sup>52</sup>) further develop the theory of human capital's contribution to economic growth by augmenting the Solow model. The production function then becomes:

$$Y = K^{\alpha}H^{\beta}(AL)^{1-\alpha-\beta}$$

Where Y is output, K is physical capital, H is human capital, and AL is the effective labor unit. While empirical tests of the original Solow model have produced unacceptable results, the augmented model produced results consistent with the theory after the inclusion of human capital. The authors concluded that:

[The] Solow model is consistent with international evidence if one acknowledges the importance of human as well as physical capital. The augmented Solow model says that differences in savings, education, and population growth should explain cross-country differences in income per capita. Our examination of the data indicates that these three variables do explain most of the international variation (p. 433).

Theodore Schultz and Gary Becker produced much of the early work on the subject of human capital. Schultz focused on education as a form of human capital, and Becker (1964<sup>53</sup>) built on Schultz's work by developing a broader theory of human capital. Theodore Schultz (1961<sup>54</sup>), in his empirical study of the effects of education on economic growth, found that in the United States from 1929 to 1957 the additional schooling of the labor force accounted for about one-fifth of the rise in national income. Denison (1985<sup>55</sup>) found that growth in years of schooling between 1929 and 1982 explained about 25 percent of growth in U.S. per capita income during this period. In studying nearly 100 countries since 1960, Barro (1999<sup>56</sup>) suggests that educational investment during the 1960s was an important variable in explaining subsequent growth in per capita income. Based on Becker, Schultz and Barro's work, we incorporate education as a proxy for each county's human capital investment in its labor force.

### **Political Persistence: Inclusion, Engagement and Participation**

While the literature on rural politics lacks the depth and breadth offered by sociologists and economists, some recent studies show that community size is related to civic engagement. Controlling for educational attainment, political participation is higher in smaller communities

than larger ones (Bryan 2004<sup>57</sup>, 2007<sup>58</sup>; Oliver 2001<sup>59</sup>). Indeed, one of the most enduring questions in political science is optimum city size. Ancient students of politics, including Plato and Aristotle, pondered the appropriate size of a polity or community. Dahl and Tufte (1973<sup>60</sup>) suggest two factors to weigh in this discussion: system capacity and citizen effectiveness. The first, system capacity, is the ability of the polity to respond to citizens. The polity must be large enough to provide a level of services sufficient to satisfy the needs of its citizens. The second, citizen effectiveness, is the extent of participation in decision making by all citizens of the polity.

The literature offers two explanations as to why the size of a community might be related to participation levels. First, fitted within the rational choice perspective, scholars argue that individuals are less likely to engage in group decisions as size increases. The clearest example of this is offered by Olson (1965<sup>61</sup>) in his analysis of collective action. As the number of participants increase, individuals perceive that their likelihood of affecting decisions is diminished and, hence, they withdraw their contribution. This analysis is further supported by Verba and Nie's (1972<sup>62</sup>) "decline-of-community" argument that metropolises produce anomie and alienation, which tend to reduce participation. Thus, these explanations predict a negative linear relationship between participation and size of community.

Second, community identity plays a role in civic engagement in small towns, with higher expectations that citizens will work together to improve their community. In smaller towns, denser social networks encourage community identity, although not necessarily comity or harmony. Verba and Nie (1972<sup>63</sup>) find that smaller towns possessed higher levels of participation in non-conflictual (or communitarian) activities than large metropolises. Of special note to our model is the effect of town location in conjunction with size. Verba and Nie (1972<sup>64</sup>) identified "bounded" communities—isolated small towns located some distance from large metropolitan areas—as autonomous political, social, and economic units. They found that residents of these bounded communities are more engaged in civic life than those who live in less bounded small towns (Verba and Nie 1972<sup>65</sup>).

More recent work by Verba et al. (1995<sup>66</sup>) show that various forms of participation result from different conditions; in particular, they show that voting is *sui generis*. Participation depends on the resources (i.e., time, money, and civic skills) available to citizens. In the deep rural communities of the northern Plains, citizens have many and varied opportunities to practice collegial decision-making in a number of venues (e.g., churches, social clubs, and rural cooperatives). These non-political experiences build civic skills and are often imparted to young people through a number of organizations (e.g., 4H, Future Farmers of America, and other rural-based programs). However, these civic skills are not evenly distributed across rural communities, but are dependent on a range of social and economic indicators, including higher educational attainment and preexisting institutional structures (e.g., self-governing clubs and organizations or employers who employ deliberative decision-making processes).

Moreover, it is widely acknowledged that contemporary democracies in larger polities are "thin" in that citizen participation is limited to (1) voting for individualistic candidates, who keep political parties at arm's length, and (2) membership in organized interest groups, who are often heavily managed by staffers or extremists. Thus, if democracy is to be successful, we would expect to find it among smaller polities. Part of our goal is to explore and discover these

“hotbeds of democracy” in deep rural communities, so that we can understand the principles that underlie their success. On the other hand, some theorists have argued that since smaller communities are less diverse they have a tendency to tyranny of the majority. “The potential defects of small, relatively homogeneous communities—a tendency to conformity, intolerance, and the personalization of politics—risk being reproduced in all forms of direct political life” (Held 2006, p.236<sup>67</sup>).

We propose to examine this relationship between civic engagement and rural development. It is our hypothesis that persistent deep rural communities have successful “thick” democracies that feature widespread participation in local affairs by members of many groups in the community. This participation reflects engagement by citizens beyond mere voting. Rather, communitarian efforts to solve community problems through non-conflictual organizations and processes promote healthy democracies and—hence—community persistence. Unfortunately, data to examine all of these questions are not readily available at the micro-level we seek to understand.

### **Literature review summary**

We link these literatures and multi-disciplinary research and, following Morrill’s model, incorporate these economic, cultural and political factors into the existing demographic model (See Fig. 2).

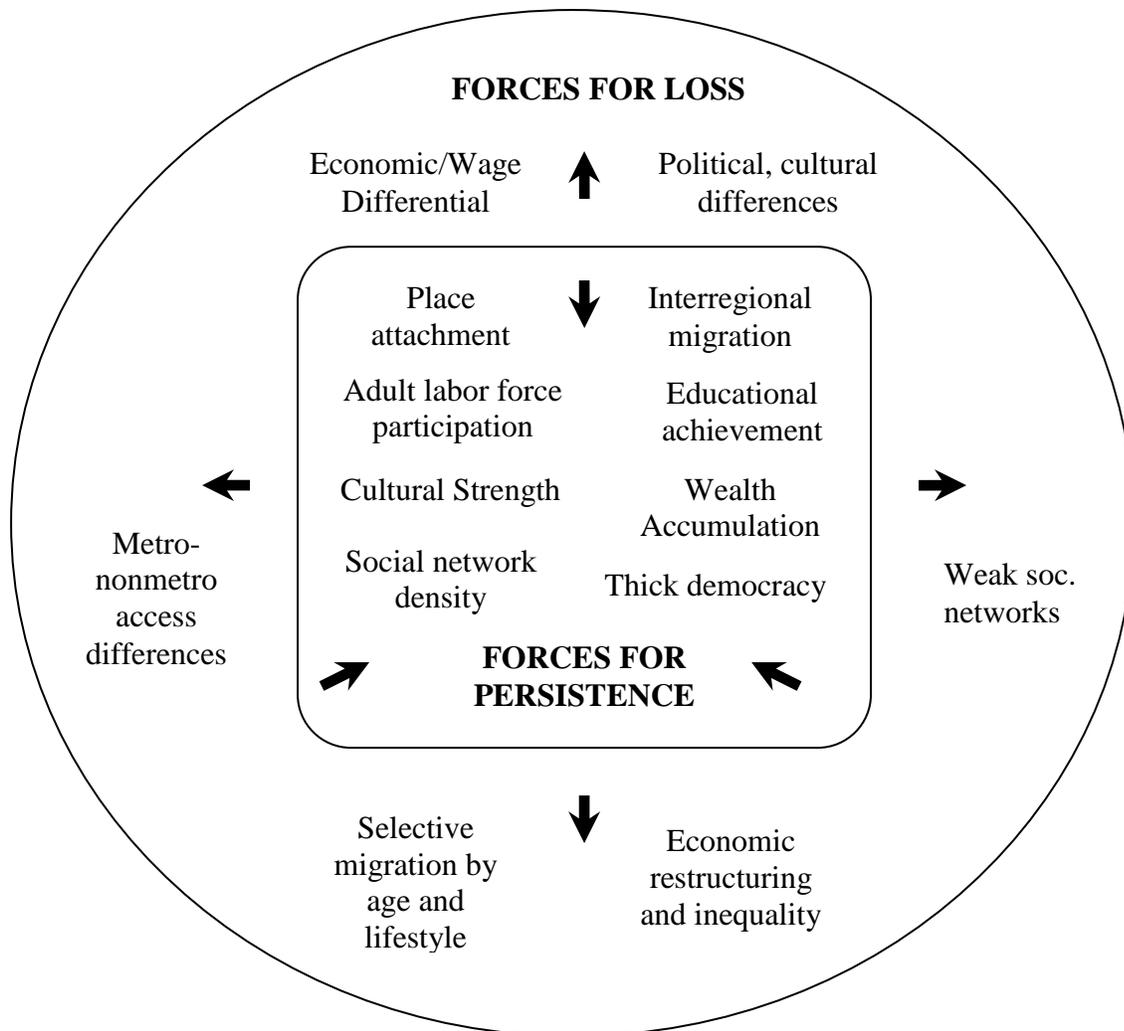


Figure 2: Adaptation of Morrill's Model for Examination of Persistence in Great Plains Communities.

Many of these factors are comparable and compatible across disciplines. We find, for example, that conceptual operationalization of social capital is consistent across all disciplines. Additionally, common gaps in understanding local investment—both in emotional and financial forms—are found in sociological and economic literature when attempting to explain the persistence of deep rural areas. The political science emphasis on participation echoes not only social capital, as noted above, but also corresponds with economic literature pertaining to human capital, particularly in relation to voter characteristics. All, again, note the importance of community size and composition. Unique contributions also exist. Some of the gaps in understandings of local investment can be addressed in the identification and density of social networks. Last, emphasis on economic “gravity” effects in rural development conjoined with human capital concepts extends the reach of the demographic model to outline both internal and external effects.

## Sample Selection and Variable Description

Since we are embarking on a long-term investigation into persistence among deep rural communities in the northern Plains, we present here our preliminary analysis of the economic, social and political forces contributing to rural persistence. As described below in the conclusion, we plan to extend and deepen our measures in future work. Our unit of analysis is the county, which is an important place of political, social, and economic consequence. The county is often the primary center of community identity in deep rural areas of the Great Plains; it is the chief tax collector as well as the planning, zoning and law enforcement authority. It also elects the most visible officials in rural America. The county in this region is nearly coterminous with the community we seek to understand. These deep rural communities are centered on the largest town, which is almost always the county seat and home to the community's schools. In short, community members visit the county seat regularly to conduct business with the government, shop, work, or attend school or church. Economic activity within the county is highly interrelated and usually focuses on this centre of governmental, educational, and cultural activities.

Our sample begins with all counties in Montana, North Dakota, and South Dakota from which we exclude counties that are designated as metropolitan (or adjacent to metropolitan counties), Indian Reservations, and those high in natural amenities (Economic Research Service 2004a<sup>68</sup> and 2004b<sup>69</sup>). These exclusions result in a sample of 122 deep rural counties in the northern Plains (i.e., 39 of Montana's 56 counties, 35 of North Dakota's 53 counties, and 48 of South Dakota's 66 counties). In general, the deep rural counties in our sample do not have an Interstate highway through the county and, moreover, are typically a two hours' drive from the nearest metropolitan area.

For this preliminary investigation we employ two measures of persistence: per capita income and civilian labor force. Per capita income measures the viability of the community in terms of salaries and wages that provide the wherewithal to maintain the community's continued existence. Higher incomes are associated with counties that provide decent-paying jobs, which are often seen as the foundation of economic development. In our analysis, these jobs are perceived as the output of a community that has developed social and political subsystems which foster community-oriented networks and problem-solving mechanisms. Second, civilian labor force, which serves as a proxy for the population aged 16 to 65 rather than total county population, is our second measure of persistence. After completion of high school or college, many rural young people migrate from their home base in search of employment. Further, the long term sustainability of any community is not dependent on the elderly. Thus, the number of people in the workforce is a good measure of community persistence.

This quantitative test utilizes variables for which we gather data from existing sources. Our purpose in this initial effort is to propose the theory and explore whether it is worth pursuing further. In our concluding remarks, we identify additional data and methods which could be used to test other facets of the model. To explain variation in community persistence, we test the explanatory variables described in [Table 1](#).

Table 1. Descriptive Statistics of Dependent and Independent Variables  
(N = 122 Deep Rural Counties in Northern Plains)

	Minimum	Maximum	Mean	Std. Deviation
Per capita Income (Dollars)	10,206	34,804.	20,035	4,027
Civilian Labor Force 2000 (Number of People)	382	43,810	4,562	6,783
Proportion H.S. Diploma	.46	.90	.72	.07
Proportion College Degree	.04	.34	.14	.04
Total Population (# of People)	493	74,471	8,860	12,273
Population Per Square Mile (# of People)	0.3	48.2	6.5	8.8
Median Age (Years)	20.6	51.0	39.8	5.6
Retail Trade Per Capita (Dollars)	1,244	15,013	7,037	3,387
Proportion Average Voter Turnout / Population	.28	.68	.50	.08
Party Competition	0	.94	.54	.21

Table 2. The Ten Most Persistent Deep Rural Counties in the Northern Plains.

County, State (Largest Town)	Ave. Rank	Per Capita Income	Civilian Labor Force	High School Grad.	College Grad.	Total Pop.	Pop per mi <sup>2</sup>	Median Age	Retail Trade	Voter Turnout	Party Comp.
Brown, SD (Aberdeen)	5.5	25,960	20,744	.78	.21	35,460	20.7	37.2	13,943	.49	.91
Codington, SD (Watertown)	9.0	24,393	14,822	.76	.13	25,897	37.6	35.3	13,640	.46	.82
Hughes, SD (Pierre)	9.0	26,857	9,594	.85	.26	16,481	22.2	37.5	12,673	.52	.62
Davison, SD (Mitchell)	10.0	25,320	10,298	.76	.15	18,741	43.1	36.0	12,964	.46	.82
Lewis and Clark, MT (Helena)	11.5	23,600	28,464	.87	.28	55,716	16.1	38.0	9,934	.61	.70
Ward, ND (Minot)	12.0	23,497	29,059	.82	.19	58,795	29.2	32.4	12,764	.37	.92
Gallatin, MT (Bozeman)	14.0	43,810	22,820	.90	.34	67,831	26.0	30.7	11,603	.52	.94
Stutsman, ND (Jamestown)	14.0	23,614	11,355	.74	.17	21,908	9.9	39.6	9,863	.40	.72
Beadle, SD (Huron)	15.0	23,944	8,558	.76	.15	17,023	13.5	40.1	8,530	.48	.74
Pembina, ND (Cavalier)	16.0	29,539	4,572	.73	.13	8,585	7.7	41.6	11,943	.41	.69
<b>TOP TEN MEAN</b>	--	<b>27,053</b>	<b>16,029</b>	<b>.80</b>	<b>.20</b>	<b>26,770</b>	<b>22.6</b>	<b>36.8</b>	<b>11,786</b>	<b>.47</b>	<b>.79</b>
<b>OVERALL SAMPLE MEAN</b>	--	<b>20,035</b>	<b>4,562</b>	<b>.72</b>	<b>.14</b>	<b>8,860</b>	<b>6.5</b>	<b>40.0</b>	<b>7,037</b>	<b>.50</b>	<b>.54</b>

## The Most Persistent Communities

Before turning to a more rigorous regression analysis, we first explore the most persistent deep rural communities by ranking each county on both dependent measures (i.e., civilian labor force and per capita income). [Table 2](#) lists the ten counties that ranked the highest on this measure to understand commonalities among these most persistent deep rural communities. The first column of Table 2, labeled “Average Rank” was used select these ten counties. Each county in our sample was ranked from 1 to 122 in per capita income and civilian labor force. Average Rank is the arithmetic mean of these two numerical rankings. It produced a sorting proxy of “average persistence ranking” for each county.

One common geographical characteristic exists; each of these persistent communities is at least an hour’s drive from any neighboring town of comparable size. Remember, our sample excludes counties that are metropolitan and metropolitan adjacent, so all counties in the sample are located at least one county away from a metropolis. However, these ten most persistent counties are also *some distance from other non-metropolitan large towns*. Restated, persistent deep rural counties do not exist in geographical dyads (or triads). Indeed, these ten communities serve as sub-regional trade markets for a substantial land area—usually a 50 to 150 mile circle around the central town—which lend credence to the “urban island” or “gravity center” explanations discussed above. These communities provide the locale for sub-regional staples of shopping, entertainment, and cultural activities.

However, the urban island thesis does not highlight why *these particular communities survived*—as compared to the many neighboring towns which could have developed more fully instead. By 1900, homesteading laws and early settlement patterns combined to engender small “service villages” every 3 miles or so throughout the region (i.e., about an hour’s walk back-and-forth for the most distant farmer). Any theory that seeks to explain the persistence of deep rural communities must show *why this particular combination of persistent communities outlasted* the hundreds of other potential aspirants.

For example, why did Huron, SD rank higher on our average persistence ranking than nearby Woonsocket and Wessington Springs? Woonsocket—the “town with the beautiful lake”—is the county seat of neighboring Sanborn County. It is closer to both I-90 and U.S. 281 than Huron, yet its’ persistence ranking is only 50. Similarly, Wessington Springs, the county seat of neighboring Jerauld County tied with a rank of 50; it boasts an excellent complement of outdoor activities, including many hunting and fishing opportunities, a 9-hole golf course, and an airport. All this and Wessington Springs is only 30 miles from I-90. Yet both communities have not retained their population as well as Huron, which serves as the major sub-regional center. As Wood (2008<sup>70</sup>) shows, surviving communities in the Plains were innovative in some unique way that set their town above other competing towns, which are now dead or dying. Our integrated theory suggests that these communities featured dense social networks, human capital and political engagement in such a way that these towns stood out from the crowded field of contenders for sub-regional prominence.

In every case, the means for the ten most persistent counties are in the predicted direction as compared to the overall sample means (see [Table 2](#)). The top ten have a higher proportion of

educated individuals, especially college graduates. In each of the ten counties, the population measures and retail trade scores are at least as high—and usually much higher—than the overall sample mean. Moreover, the median age of eight of the ten most persistent counties are lower than the overall mean.

However, the political participation measures provide divergent results; the voter turnout rate is lower in all—but three—counties than the sample mean! As predicted, voter turnout in national elections is not associated with community persistence; healthy democracies require participation in civic forms that bring citizens together to debate the issues. Voting is a solitary act that does not require social interaction or civic engagement. However, party competition engages citizens in interchange and evaluation of each party's platforms and issue positions. Each of these ten counties has a substantially stronger two-party system than the overall mean.

If we search for additional commonalities among these ten most persistent counties, other explanations of survival fall by the wayside. An oft-heard complaint among struggling deep rural communities is the lack of access to high-speed roads. However, only six of these counties are on the Interstate highway system. Two other counties are at the intersection of only two U.S. Highways. And Huron in Beadle County, SD is connected to a single U.S. Highway!

Another common misperception is that the presence of a major public university is required for stability. Only one of these ten counties accommodates a major public university; Montana State University in Bozeman enrolls 13,000 students. Among the others, only two counties house 4-year public colleges and their enrollments are modest (roughly 3,500 at Minot State University and slightly more than 2,000 at Northern State University in Aberdeen, SD). Four of the other counties have either a public 2-year institution or a private 4-year college; all with enrollments around 1,000 students. Admittedly, these small colleges provide a year-round base of employees, which undoubtedly is a factor in the community's persistence. Government centers also provide this valuable core of employees; two of the three states' capitols (Helena, MT and Pierre, SD) are ranked in the top ten of most persistent counties.

### **Regression Analysis**

This simple analysis of the top most persistent communities suggests that our explanatory variables offer some purchase to understand the factors and processes underlying community persistence. Of course, we need a deeper examination to proceed further in our analysis confidently. And, indeed, more rigorous regression modeling confirms our expectations (See [Table 3](#)). For per capita income, all of the variables are significant and in the predicted directions, except the proportion of high school graduates.

Table 3. Community Persistence and Social, Economic, and Political Indicators, OLS Estimates

Dependent Variables:	Per Capita Income			Civilian Labor Force		
Independent Variables:	<i>B</i>	s.e.	$\beta$	<i>B</i>	s.e.	$\beta$
CONSTANT	804.1	4849.6	--	-6,515.2	9,634.7	--
HS Graduates	27.3	60.1	.06	30.7	119.4	.03
College Graduates	*165.2	89.1	.21	***696.9	177.1	.40
Population per mi <sup>2</sup>	**76.5	34.7	.23	***292.7	68.9	.38
Median Age	***419.3	97.3	.55	-117.3	193.3	-.61
Retail Trade	***0.43	0.1	.42	0.2	.19	.07
Voter Turnout	*-12,147.9	6,712.7	-.29	-13,214.9	13,336.1	-.14
Party Competition	*2,744.9	1,403.6	.15	***9,328.9	2,788.5	.23
Montana Dummy	-594.4	856.2	-.09	***4,889.5	1,700.9	.31
North Dakota Dummy	** -1,948.5	943.4	-.28	1,429.4	1,874.2	.09

Note: *B* = unstandardized coefficients; s.e. = standard error,  $\beta$  = standardized coefficients.

\*  $p < 0.10$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$

Further, we anticipated no relationship between turnout at the voting booth and community persistence, but the data here indicate a strong *inverse* relationship. That is, controlling for educational attainment and the other explanatory variables, deep rural communities with high levels of voter turnout are associated with *lower per capita incomes*! This finding appears contrary to the well-established literature—which is a close to a law as political science has—that a positive relationship exists between socioeconomic status and political participation. However, as explained above, community persistence results from a nexus of social networks, human capital, and political engagement, whereas voting is a solitary act. So, communities in which citizens interact and engage each other in solving problems are more likely to persist. On the other hand, higher levels of party competition are positively associated with higher per capita income. These two findings confirm our hypothesis that persistent communities feature deeper, deliberative forms of participation beyond mere voting in national elections.

When we turn to civilian labor force as the dependent variable, several variables drop out of significance, most notably retail trade and median age. However, advanced educational attainment, population density, and party competition remain strong predictors of community persistence. Thus, for both dependent variables, these three independent variables (i.e., proportion college graduates, population density, and party competition) foster confidence that our theoretical model is supported by a quantitative test. In particular, evidence for human capital is strongly supported by these results in that the proportion of residents with a college education is significant and the proportion of high school graduates is not. It is evident that earning one's high school diploma in the Plains provides few economic advantages as it did decades ago. Rather, earning a college degree—with its emphases on the liberal arts, critical thinking, creativity and innovation—engenders community persistence through the mechanisms of social networks and deep civic engagement described above.

Finally, the dummy variables for each state are significant and possess fairly large standardized betas, which indicate that political context matters. Although these three northern Plains states are adjacent and have broad similarities, we cannot ignore seemingly minor differences in constitutional arrangements, statutory laws, socioeconomic groups, historical precedents, and political subculture; all of which may encourage or stifle community innovation in retaining population.

### **Concluding Remarks**

We propose that these community differences in persistence among deep rural counties are not idiosyncratic and dependent on “unity of leadership” as posited by Wood (2008<sup>71</sup>). Rather persistent communities have certain identifiable characteristics including dense social networks, high levels of human capital, and inclusive community-wide decision-making. The development of social skills and civic experiences in solving community problems lead to community persistence. That is, over time, broad swaths of the citizenry have engaged in social processes that thrash out the complex issues with their members of their social networks. As a result, in a wide range of community forums (e.g., town councils, service clubs, church meetings), many individuals have experiences in standing up in a public meeting to articulate and defend their ideas, counter objections, and reach a consensus. (These are the kinds of experiences and interactions that are so richly described in Bryan’s (2004<sup>72</sup>) discussion of New England town meetings.) It is these deeply-civic forms of political participation that lead to community persistence.

As should be evident by the many failed efforts to revitalize rural America, there are no quick fixes. The survival of rural areas cannot rely on a simple focus on economic development (e.g., jobs by large employers or community “branding”), which are highly sensitive to global shifts of financial capital. Rather, rural leaders and activists should further develop systems that invest in human capital, build on existing social networks and enlarge opportunities for citizens to practice deliberative problem-solving. Of course, the findings presented here are slender reeds on which to base these conclusions, but the results do give us confidence to move forward to extend and further test our hypotheses.

Fortunately, our integrated theory allows for multiple avenues of investigation in both quantitative and qualitative veins. This preliminary exploration emboldens us to collect additional data to understand why some communities continue to exist even though much of society has abandoned them. Hence, we can pursue several avenues to explain why certain communities persist despite the odds. An initial step is to develop an index or summary measure of community persistence that can be used by many researchers to test various models. Our preliminary measures of civilian labor force and per capita income only partially capture community persistence. Obviously, our snapshot analysis here does not model changes over time, which is a well-established tradition in economics. Thus another step is to incorporate measures of population loss (or gain) over several decades. In particular, the Great Farm Depression of the 1980s was a cataclysmic event in the northern Plains, where many communities which were barely surviving finally disappeared.

Moreover, our theory is imprecise in connecting the concepts into a series of proximate mechanisms. Before proceeding to that fuller theoretical development, we need a deeper understanding of these community-level processes. These underlying place-based processes can best be discovered through qualitative research in both persistent and non-persistent communities. Via elite interviews, focus groups, and reconstructions of social histories, we can flesh out the connective tissues between these concepts.

Our analysis indicates that a mix of place-based social, economic, and political variables are essential to community persistence and future studies should include more of these measures. Both physical and human capital infrastructure must be examined, including ready access to high-speed transportation networks and the presence of a stable core of government income. For the latter, one indicator might be government transfer payments to individuals (e.g., retirement and disability programs). Another is the number of government employees, including at K-12 schools, institutions of higher education, and county offices. Beyond providing steady employment, this workforce is highly educated, which means they are more likely to engage in community problem-solving at deeper levels. Yet another indicator of community-problem solving in inclusive bodies is the number of active service clubs (e.g., Kiwanis, Rotary, Lions), which may be associated with the development of civic engagement and community persistence. As this work demonstrates, an understanding of persistence, not just growth, is an emergent field and much remains to be explored in this new vein of community persistence in deep rural areas of the Great Plains. While our focus here has been limited to three states, the Ogallala Aquifer basin presents a broadly comparable set of communities reaching south through the western parts of Nebraska and Kansas (and perhaps even extending into the panhandles of Oklahoma and Texas).

The availability of rural persistence data is a limitation of the empirical portion of our study, which primarily utilized U.S. Census data. Although rich in breadth, the data represents one point in time for rural counties. Without the inclusion of a time variable, dynamic directional relationships between variables cannot be addressed empirically. Therefore our study relied on theory to address the direction of causation. This empirical limitation should be addressed in future research.

**End Notes:** Redlin, Meredith, Gary Aguiar, George Langelett, and Gerald Warmann. "Why Are You Still Out There?" Persistence among Deep Rural Communities in the Northern Plains." *Online Journal of Rural Research & Policy* (5.5, 2010).

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(Pictured from left to right: Aguiar, Langelett, Redlin, and Warmann)

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