Online Journal of Rural Research & Policy

Volume 7
Issue 3 *Absence of Age-Income Correlation in Ten Rural South Dakota Counties*

Article 1

2012

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Recommended Citation

Junker, Daren; Redlin, Meredith; Olson, David; and Aguiar, Gary (2012) "Absence of Age-Income Correlation in Ten Rural South Dakota Counties: Real Capital Outflow or Self-selection Bias?," *Online Journal of Rural Research & Policy*: Vol. 7: Iss. 3. https://doi.org/10.4148/ojrrp.v7i3.1741

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Recommended Citation Style (MLA):

Junker, Daren, Meredith Redlin, David P. Olson, and Gary Aguiar. "Absence of Age-Income Correlation in Ten Rural South Dakota Counties: Real Capital Outflow or Self-selection Bias?." The Online Journal of Rural Research and Policy 7.3 (2012): 1-18.

Key words: Age, Income, Rural, Life Course Theory, Rural South Dakota

This is a peer- reviewed article.

Abstract

Previous research establishes a positive correlation between age and income during the working years of 18 to 65. Survey data from the first 10 communities in a development project in South Dakota do not exhibit this correlation. Census data is examined for the 10 counties involved to determine whether the correlation is absent countywide or if self-selection bias may have produced this result. With income distributions matching their respective counties and working age distributions that do not, factors that might skew self-selection in the observed manner are examined from a life-course perspective.

Often the assumption is made that small data sets from applied projects cannot yield much information of value for research purposes.

Applying nonparametric tests appropriately allowed some surprises to be discovered and explained in one such small data set. Income has long been positively correlated with age (Diaz-Giménez, Glover, and Ríos-Rull 2011)[1], but this correlation did not appear in surveys collected from participants in 10 community book reads across South Dakota hosted by the SDSU Extension and the Political Science and Sociology departments of South Dakota State University.

The lack of a well-known correlation naturally produces several questions. Is it simply an anomalous data set? Is it an artifact of self-selection bias? Is it an indication of rural stagnation? The fundamental research question here is, "What accounts for the lack of correlation between working ages and incomes of participants in the South Dakota Book Read project?"

Some nonparametric tests are applied to examine a small data set in which much of the information is ordinal and does not have a normal distribution curve. Tests such as Kruskal-Wallis and Chi-square are robust enough to apply to small data sets and determine whether the distribution matches another set of data or is random.

When the age and income distributions are compared to national, state, and county-level Census data and across locations, it appears as though the lack of correlation is not random.

Since the communities in the book read already have some experience with development efforts, the life-course framework is used to examine factors that support the atypical distribution of participants. These factors also reveal some of the potential pitfalls of repeatedly working with the same communities. They also provide insight to potential ways to strengthen Community Development efforts.

Literature Review

The correlation between age and income during working years has been so well established that many papers simply assume it. Age and income continue to be strongly related (Diaz-Giménez et al. 2011)[2] in contemporary examinations of raw data. Further review found no other instances of non-correlation. The continued support and lack of contrary information leads to other authors assuming a correlation between age and income from the ages of approximately 18 through 65. Previously published research suggests some possible explanatory factors related to rural incomes, however, as summarized here.

Many countries around the world have experienced income stagnation (Reddy and Minoiu 2009)[3]. This stagnation results in reduced buying power as prices of goods and services continue to increase. While Reddy and Minoiu examined data at the country level, two factors they identified in their stagnation prediction models certainly pertain to rural areas. First, exporting primary commodities—basic foodstuffs or raw materials as most rural regions produce—was positively correlated with the likelihood of stagnation. Even though their study focused on economic stagnation, it requires no significant leap of logic to see it as applicable to other types of capital, such as human. Secondly, the growth, or lack thereof, of the working age population correlates with increased stagnation. Counter-intuitively, countries with greater growth in economically active ages compared to overall population change showed a stronger association with stagnation. Although one might expect that growth in the economically active population would correspond with economic growth, the key element is underutilization. Growth models assume full utilization of resources. When this assumption is violated, additional resources, including labor, simply glut the market. This is especially relevant for 'graying' rural areas. The 2008 investment market failure soured so many retirements and resulted in would-be retirees either returning or remaining in the market. At the same time, young people looking for scarce entry level jobs found themselves competing with someone near retirement age. Once stagnation

begins, a region faces an extremely hard struggle to break free of it. Reddy and Minoiu found a 75% correlation between which countries experienced economic stagnation in the 1960s and again in 1990s.

Many community development efforts consider entrepreneurship the most promising solution to economic dependence on production and the export of basic materials. Expecting new businesses to restore economic prosperity may be unrealistic if the population demographics remain the same. An examination (Renski 2009)[4] of urban, nonmetropolitan rural, and intermediate businesses of various types identified some disadvantages for rural business startups. "Nonmetropolitan rural places are undersupplied with new high-tech manufacturing and both high-tech and conventional advanced services firms, and have lower growth rates in both high-tech and conventional manufacturing and advanced services" (2009:60)[5]. Renski notes constraints on would be rural entrepreneurs of both "limited local markets and relative isolation" (2009:60)[6]. Entrepreneurial startups need to be noticed by their target market. When the target market is primarily in urban areas, a rural startup experiences a disadvantage. Even with a widely dispersed, possibly global, market, location can hinder rural businesses that do not have access to the globally connected, urban business networks. These businesses are primarily connected through other small business or rural networks and only access larger markets through electronic avenues. Much of the popular business literature highlights the advantages of urban location. Uzzi and Dunlap (2005)[7] found that the wide access of the internet has actually intensified the competitive advantage of a well-developed private social network. Urban networks simply provide immediate access to a greater diversity of potential contacts.

Given the demographic causes to some of the economic troubles, many community development efforts sensibly focus on attracting and retaining residents to rural communities. Kangayi, Olfert, and Partridge (2009:49)[8] summarize the hope of robust community development efforts: "The social economy holds promise for rural community development through local capacity building, improving political engagement, expanding networks, and increasing productivity by reducing transactions costs." Unfortunately, that promise is often unrealized. The growing popularity of co-ops promoting local goods has generated several efforts to use rural production as an attractant for new residents. When Kangayi et al. looked at the outcome of such efforts in Canada, co-ops generally did not improve the prospects of rural population growth (Kangayi et al. 2009)[9]. Such co-ops have a smaller market available than if they simply "export" their produce to a large corporation. Additionally, price still heavily influences most consumers. Selling small quantities requires higher profit per item sold. Additionally, potential customers generally find a wider selection of items at a major retailer and enjoy the convenience of 'one-stop' shopping. Items manufactured to support rural business usually encounter the same competitive forces as those goods mass produced for consumers. The relentless efficiency of rational systems overwhelm efforts for local development.

Are some rural areas really just "dead ends"? Farole, Rodríguez-Pose, and Storper (2011)[10] examine development efforts from a human geography perspective. They identify that some of the social capital touted as a strength in rural areas, such as trust, strong norms, solidarity, and reputation, actually hinder growth. In times of uncertainty, these factors provide comfort, but comfort limits risk taking. On the other hand, local community factors balance large-scale disadvantages of more formal systems, such as slowness, complexity, and difficult compliance

monitoring. Another group of geographers (Partridge, Bollman, Olfert, and Alasia 2007)[11] identified several factors in addition to distance from an urban area that affect rural development potential. Urban income and growth along with relative availability of amenities interact with distance and even topography to determine whether a rural community is likely to benefit from, or be hurt by, a neighboring urban center's growth. Areas near enough, and with adequate amenities, tend to prosper by becoming bedroom communities. More distant towns, or those less desirable for another reason, tend to lose population to the urban area and have diminishing opportunities in a process referred to as "backwash". The most notable aspect of the Partridge et al. study was that instead of examining only one urban area, it looked at all of Canada for a period of two decades. They found urban effects reaching farther than expected. For distant small communities, only improved quality of life overcame the pull of urban growth.

The elderly in many rural areas are persistently poorer (Lee 1980[12]; Tickamyer and Duncan 1990[13]; Philip and Gilbert 2007[14]) than their urban counterparts. Lower income during working years and isolation contribute to this enduring fact. The Philip and Gilbert (2007)[15] study divided people into three categories rather than a binary urban-rural split. The elderly in remote rural areas tend to have the most persistent poverty, compared to not only urban residents, but also those living in rural areas near more urban centers. Wealthier rural retirees more often move into retirement communities in an urban area, leaving less mobile, poorer elderly residents behind.

Mookherjee, Ray and Napel (2010)[16] found that location affects the aspirations of children. Parents selectively reinforce interests children express in areas that are most likely to result in better wages for their children. Unsurprisingly, people in areas with demand for skilled labor raise children aspiring to learning a trade. Education decisions are made based on what is rewarded. Their findings support the basic premise in "Hollowing Out the Middle" that parents and schools in rural areas subtly encourage those with the greatest achievement potential to leave the area.

Theory

The interaction of "*historical time and place, the timing of lives, linked or interdependent lives*, and *human agency*" (Elder 1998:4)[17] comprise the core of life course theory. Recognizing that the Great Depression had produced very different trajectories for people, Elder (1998)[18] identified key socio-cultural constraints on human agency as determining what range of options were available to people. Choices can only be made among the available options. Events of history, where we are in life development when they happen, and how our most influential people, such as parents for young children or peers of older children, respond will all interplay in an individual's decision making. Because of interdependency, Elder (1998)[19] emphasizes the need to understand all of a person's life stages in order to interpret responses to present social patterns.

Cumulative advantage-disadvantage data suggests the cumulative effect of multiple small factors within the constraints of social structures, which over time, create divergence (Dannefer 2003)[20]. The resulting diversity generates much of the stratification found among the elderly population. This approach is commonly used in gerontology. As a structural theory, cumulative advantage-disadvantage (CAD) focuses mostly on macro- or meso-level factors. Dannefer (2003)[21] suggests

applying CAD to the life course to understand inequalities within generations. The CAD approach highlights the limits of individual agency in the context of resistance to change due to the reproduction of existing social structures and social relations (i.e., the presence of "social facts" in the Durkheimian sense). Dannefer (2003)[22] points out that CAD and life-course together suggest that for both groups and individual members of a group, 'promotion' may not be based on merit as much as we like to believe. A human capital explanation examines the investment, such as education, to account for the successes of some, but underestimates the strength of contextual factors such as increasingly limited opportunity (Dannefer 2003)[23]. Consider that rural towns now compete for increasingly limited economic opportunities, analogous to employees seeking promotion in a company undergoing cutbacks. Those communities that stand out from their cohorts will accumulate more and more advantage, while those towns that stagnate will find increasing disadvantage.

Social reproduction theory may describe how the initial strata one starts in sets the limits and determining factors that produce essentially the same socioeconomic class for a new generation (Dannefer 2003)[24]. However, the theory does not recognize the downward mobility bias as shown in places of economic downturn, such as in U.S. Southern states after textile production moved overseas, or the Northeast states after steel production migrated. Life course theory explains such amplification through the interdependence of lives.

Combining CAD and life course theory allows consideration of a community's "life cycle". The residents of a particular area and generation can be treated as a cohort. CAD helps identify the structural factors omitted by life course theory. Life course contextualizes the operation of 'historical time and place'.

What accounts for the lack of correlation between working ages and incomes of participants in the South Dakota Book Read project? As people of each generation make choices about making a better future for their children, they collectively create the environment of the next generation's choices. Choices that deplete resources, whether material as in a classic colonial system, or human as in the rural areas of America, reduce the opportunities for future generations. Local decisions to import new economic entities do produce future opportunities for both human and economic capital growth. The accumulation of advantage or disadvantage is not seen at the community level until a few generations have passed through their prime working years. The life course of a social group is affected by the environmental options, past choices, and interactions of group members. When a community's development prospects seem to be spiraling downward, those who are most connected to past decisions and the present power structures are most likely to again be those in the position to make further decisions. This repetition of decision-makers solidifies the perception of development options and the community ethos surrounding the very idea of what constitutes "good" development.

Data

Data was gathered in two separate stages. Initial data came from surveys conducted during the first ten SD Community Read visits in 2010 and 2011. Some of this data was compared to U.S. Bureau of Census information. In the second stage, data from follow up interviews with eighteen

participants and available community web sites were used to identify key factors to account for anomalies in the initial data.

Communities that had participated in the Horizons Project sponsored by the Northwest foundation were invited to participate in community book reads. The political science and the sociology departments at South Dakota State University (SDSU) worked jointly with the SDSU Extension Service to engage rural community members in a discussion of the book, *Hollowing Out the Middle* (Carr and Kefalas 2009)[25]. The goal of the discussion is to identify action steps for that community to improve their own development.

Twenty communities signed up to participate and ten completed the book read discussion at the onset of this article. Twelve communities had completed the community read when the project ended. Facilitators took notes during the discussions and attendees completed a survey immediately after the discussion.

Information gathered in an applied setting is seldom used by researchers. As is typical of applied data, small, non-random samples, gathered for non-research purposes present many challenges. Many statistical analyses are not robust enough for small sample sizes and questions presented by the live data are seldom asked by the practitioners in the field.

County, state, and national data was obtained from ACS online (U.S. Bureau of Census 2009b)[26] and the Census at Data Center SDSU (U.S. Bureau of Census 2009a)[27]. To compare the detailed individual data from the surveys to the aggregate data from the Census estimates, two adaptations were required.

First, some of the data from one source was combined, or further combined into bands to match the ranges in the other source. For example, the survey had nine income brackets, while the Census data had sixteen, but all nine of the survey brackets had range limits compatible with the Census estimates, so the Census ranges of 'less than $10,000, $10,000 to $14,999, and $15,000 to $24,999 were simply further aggregated to match the survey range of 'less than $25,000'. Aligning the brackets resulted in the following ranges: "Under $25,000", "$25,000$25,000-34,999", "$35,000-44,999", "$45,000-59,999", "$60,000-74,999", "$75,000-99,999", "$100,000-149,999", "$150,000-199,999", and "$200,000 and over". The surveys asked for specific age in years, so these were simply counted in age brackets which matched the ACS (U.S. Bureau of Census 2009a)[28] data's three working age ranges: "under 25", "25-44 yrs", and "45-64 yrs". This level of aggregation allowed comparisons between national, county, and survey data.

Secondly, some of the Census data was disaggregated into pseudo-individual values that accurately represented the aggregate data. Because the analyses to be performed were nonparametric comparisons of medians, the aggregate data could safely be disaggregated by simply producing the number of 'individual' responses matching the reported income range. For example, the Census data estimates that 34 working age people under age 25 in Grant County earn less than $25,000 per year. In the analysis program, 34 identical entries for location 1, age range 1, and income range 1 were generated in Minitab 16 Statistical Software (2010)[29]. This enabled the program to properly calculate the various comparison tests to the individual responses from the survey data.

Table 1 lists the locations participating in the Book Read, the corresponding median incomes from U.S. Bureau of the Census (2009b)[30] Factfinder data, the number of working age participants that filled in surveys, the median age of those respondents, and the age bracket in ACS data that contained the median age of workers according to the U.S. Bureau of the Census (2009a)[31]. Participants in the book read appear significantly older than their counties. Many families did not bring children, and the few children present did not complete surveys, skewing the data toward the older ranges. Since the correlations used in other studies pertain to income for working age people (18-64), the statistical tests performed were limited to the same ages.

Table 1: Medians of working age participants by location

Location	Town	County	Factfinder County Median Income	Number of Working Age Participants	Median Age of Working Age Participants	ACS Median Working Age of County
1	Georgetown	Grant	32808	14	53.0	45-49
2	Wilmaton	Doris	33810	8	42.0	45-49
3	Steville	Bruno	38750	12	50.5	40-44
4	Marysville	Martha	43984	5	58.0	45-49
5	Tonytown	Harrold	39066	2	60.0	45-49
6	Winona	Rayann	35462	10	52.5	40-44
7	Ivanville	Barney & Kent	42541	6	51.0	45-49*
8	Kimmee	Barbara	44570	3	60.0	40-44
9	Victory	Bob	41043	14	45.5	25-29
10	Winnie	Charlene	35385	3	43	40-44

*location 7 borders two counties, this is the midpoint of their medians

Because the age information from the Census (U.S. Bureau of Census 2009b)[32] is already aggregated into five-year bands, a precise median age cannot be calculated. However, adding the data from each end of the spreadsheet with only working ages allowed for the identification of which age range the median would fall within.

Community web pages and follow up interviews provided data for interpreting the data obtained from the book read. Web pages represent not only a convenient source of information, but one that is arguably most relevant to potential ‘High Flyers’ or ‘boomerangs’ as discussed later. Historical information from the websites supplied clues for significant events and decision points in community life courses. Six of the ten communities had sites that appeared to be created by some local representative. Third-party sites provided the most pertinent information for three of the towns. Tonytown had no significant information online. One of the local sites provided no information about its history, but focused entirely on the present and future, fitting very well with a community development approach rather than a conservation orientation. Follow-up interviews provided indications regarding potential self-selection bias, based mainly on the

questions of the respondents' occupation and the respondents' perceptions of broader community participation (or lack thereof).

Method and Results

Beginning with a data-driven, though not quite grounded theory approach, summary statistics and preliminary non-parametric tests of nominal and ordinal data identified potential anomalies warranting further investigation. Small sample sizes make many standard statistical tests questionable. Kruskal-Wallis tests determined that responses to five question pairs had the same distribution. Age and 'raised in area', age and income, 'number in graduating class' and income, 'number in graduating class' and education, and 'raised in area' and income each matched. However, age and income should not have had the same distribution since age distributions and income distributions in other data differ (U.S. Bureau of Census 2009b[33]; Diaz-Giménez et al. 2011[34]). 'Number in graduating class' and 'raised in the area', age and education, and gender and income did not share common distributions, which is unsurprising. Chi-square tests identified an equal probability of a participant being raised in the area as not. Unequal probabilities were identified for 'professional leader', 'government leader', 'education leader', gender, education, income, and whether the participant resided in the area 'year round'. 'Number in graduating class' was distributed normally following an exponential distribution. Age displayed a non-normal distribution, which alone is unremarkable. How long the respondent had lived in town did not correspond to a normal distribution either.

Additional statistical analyses showed few surprises. The ages of participants were pretty evenly distributed between those raised in the area and those who moved into it. Greater age correlated to more education, which might not be expected given the change in education levels typical of each generation, but might be when considering who would choose to participate in a community development focused book read. The number of people in the high school graduating class did not correspond to level of education, and several other chi-square tests revealed nothing of note. Wages are higher for men than for women.

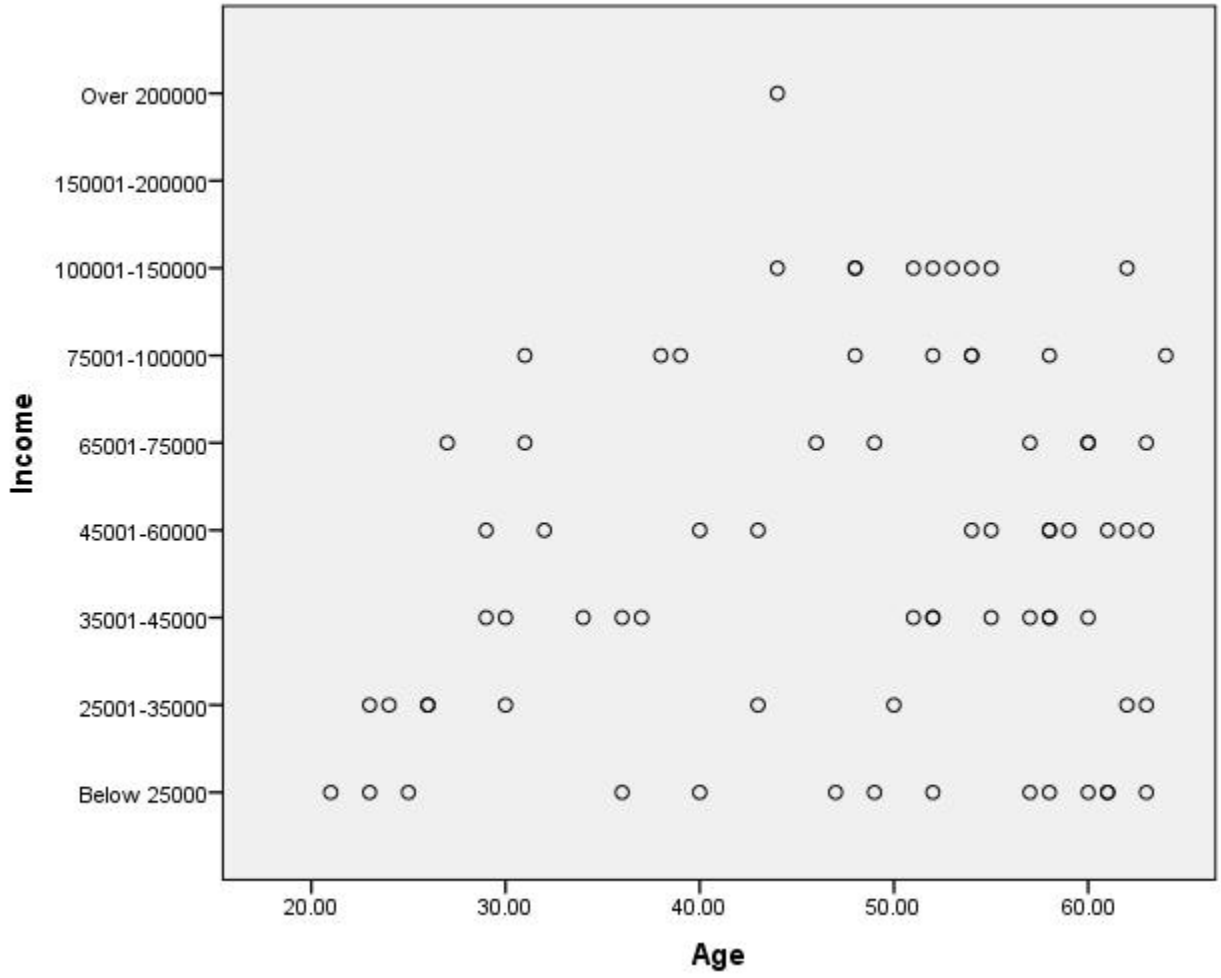
While education correlated strongly with a modest increase in income, surprisingly age did not. Age normally correlates to income through the working years. As the scatter plot in Figure 1 suggests, this did not occur in the survey respondents between ages 18 and 65 inclusive. The linear regression was not significant ($p=0.154$) nor sizeable (Adjusted $R^2 = 0.014$). While a quadratic regression was statistically significant ($p=.003$), age still did not account for much of the fit (Adjusted $R^2 = 0.146$).

The age distribution of the aggregate attendees does not match the age distribution of the United States, nor of South Dakota as a whole. Because towns are substantially smaller than state or national groupings, to safeguard against an ecological fallacy effect, each community's age distribution was compared to their respective county. Combined data of each county for both sexes was used, since gender distribution was not significantly different from the counties involved.

An upper-tailed Sign Test indicates ($p=0.055$) that the median age of working age participants may be greater than that of the counties involved, but such a relatively high p-value suggests caution in assuming significance. The more powerful Kruskal-Wallis test indicated that the ages

of working age participants do not have the same distribution as the estimated distribution of working age residents in the counties ($p<0.001$).

Figure 1: Scatter plot of Age and Income for Book Read participants completing the post discussion survey, ages 18 to 64. (n=77)



The counties represented in the Census figures do not all have the same distribution ($p<0.001$), while the participants in the various book read locations do (Kruskal-Wallis p-value = 0.591 after adjusting for ties), with the caveat that the sample sizes are small even for non-parametric tests. This distinction suggests a possible self-selection bias.

A preliminary, summary examination of community history and follow up interview responses identified potential sources of self-selection correlating to age and life choices impacting incomes. Of the eighteen follow up interviews examined, nine named some form of school official needing to be present; eight identified city leadership, and eight said some key business presence was lacking. Frequency distributions of survey responses reflect 32.5% of the participants were in some form of educational profession and leadership position and the clear majority of those, 20.8% of all responses, were teachers. Although 42.9% of survey responses marked ‘professional participation and leadership’, over half (54.5%) of those were coded as 'C

of C' (Chamber of Commerce) or 'Commercial Group' and no option for business owner was included separately. Only 16.9% of survey responses indicated governmental office and leadership. The distribution of responses suggests meetings of mostly teachers and business owners with a handful of city council members and a few non-professional residents. Some of the key comments in the follow up interviews identify possible self-selection factors.

> "People don't like to participate anymore. People want their own time and don't want to do 'community' things." - from Tonytown.
>
> "Residents are so busy with other responsibilities – not that we do not have a passion but it is hard to balance time with family. The meeting was well organized but ran super late. Working class people are so busy, retirees could get more involved." - from Winnie.
>
> "Retirees are looking for ways to be involved and was identified [sic] at the meeting." - from Wilmaton.

Life course is all about choices made in context leading to the next set of choices. From the follow up interviews, only two respondents, each from different towns, could identify actions that had occurred after the book read meetings. Two more from other towns indicated actions were pending, but as of this writing those have not yet come about. The websites reflect some of the choices made in the past and present. The existence or absence of a community maintained website can influence a potential new resident's decision about relocating. Georgetown's website clearly indicates some of the action steps including job opportunities and a trade oriented scholarship. Most of the towns started during the westward expansion of the railroads and free land of homesteading. Some of the highlight features suggested to attract visitors and new residents, including four mentions of natural capital and one touting itself as "a Small Town with a Big Heart". Some of the town websites list special events, but many are annual or out of date. A static website for a small town may not indicate much, but a website which is kept up-to-date logically is a better resource for those interested in community activities.

Discussion

At its core, science challenges assumptions. Sociology, like other sciences, still makes assumptions. Assuming nothing prevents meaningful work from being accomplished. But not periodically checking whether assumptions are still warranted invites error. Applied data is messy. Gathered for other purposes, important questions are not asked. Focused on accomplishing a task, sample sizes are small and not usually random. Most statistical assumptions cannot be met with much applied data. What happens when we check those assumptions?

Applied data may allow us to avoid the Hawthorne effect since it was gathered for a different purpose. Project data can also give researchers access to otherwise inaccessible respondents, those who would not generally participate in a research effort. There are not only qualitative tools for analyzing field data, but sometimes nonparametric statistical methods can accommodate the lack of assumptions normally desired. A small data set can be analyzed quickly from multiple

angles to reveal anomalies otherwise missed. Anomalies are not always noise. Sometimes they point to greater understanding.

Income is "supposed" to correlate with earnings in during working years. That is, both income and earnings are expected to continuously increase from age 20 and decline around age 55. Individual wealth (indicating property ownership, investments, etc.) should also continue to increase until age 60 when it too begins to decline (Diaz-Gimenex, Glover and Rios-Rull 2011)[35]. Our question is: Why did the age and income variables in the community book read survey data not show the typical correlation (Diaz-Giménez, Glover, and Ríos-Rull 2011)[36]?

Self-selection bias explains the lack of correlation in the book read participants. As they identified themselves, disposable time is scarce for many and older residents are more able to choose to attend. More retirement age participants completed the book read survey than a random sample of the county would reflect. Life course theory suggests a couple of additional factors. Those who have made, or feel able to make, choices about a town's development are likely to attend. Participants who believe it is futile will not take the time. Past experiences with development efforts would logically impact future actions. Past inaction or failure is likely to lead to future lack of participation. Past success, even if in non-development arenas encourages future participation. When a town has a second, third, or perhaps even higher numbered attempt at community development and past results have been meager, two primary groups are likely to show up: those with nothing to lose and plenty of time, and those who persevere despite the odds. Young families in either of those groups are unlikely to participate. A large number of working professionals in either of those groups is also unlikely. Retirees, busybodies, and tenacious professionals will join those who by chance fit the meeting into their schedule or feel obligated either by office or personal connections to attend. On the other hand, when success starts building, a community finds new energy and many more make time for continued development efforts.

Rural community development faces many uphill battles. Most communities have already been accumulating disadvantages. Many rural areas are reputed as "dead end" career locations. Remoteness correlates with poor economic opportunity and an available labor force that is either young or old. Entrepreneurship often fails to deliver the promise of redemption, adding another step of perceived futility to a community's life course. Once stagnation sets in, barring a substantial change in conditions, it tends to stay (Reddy and Minoiu 2009)[37]. Less mobile people are left behind as those with the means move to better work or retirement opportunities (Philip and Gilbert 2007)[38].

Quality of life can trump geographic effects of semi-distance urban growth (Kangayi et al. 2009)[39]. Social capital applied to entrepreneurial efforts results in greater success. Family life is better at the slower pace of rural life (Farole, et al. 2011)[40]. A professional with an established network can continue to prosper in any town with adequate infrastructure and amenities (Uzzi and Dunlap 2005[41]; Partridge, et al. 2007[42]). One key is to stop exporting the wealth of rural areas (Carr and Kefalas 2009[43]; Flora and Flora 2008[44]).

Hollowing Out the Middle (Carr and Kefalas 2009)[45] presents the hypothesis that rural towns export a particular type of human capital – the Achievers. In their typology, Carr and Kefalas

(2009)[46] identify Achievers as those who have what it takes to succeed. Like caterpillars, they are fed everything the town has to offer and then go off to the cocoon of college, never to return. Seekers desire the perceived better life "out there", but do not have the same level of support. Stayers are portrayed negatively, often as “losers” who cannot even figure out how to jump on the train to get out of town. Returners have two subtypes: Boomerangs and High Flyers. Boomerangs are seekers to try but fail and so return to the comforts of home with the Stayers. High Flyers have succeeded so much that they decide to drop out, either for the idyllic life or to raise children in a safe, family-oriented environment.

The discussions following the book reads reveal the heavy investment of small communities in helping "Achievers" escape the trap of rural stagnation and suggest some possibilities to better manage resources for local development. People choosing to invest resources in children that leave creates a regional salary cap in effect. Cities investing in their own future attract financial wealth. Rural areas investing in their children's futures drain it away. Cumulative advantage and disadvantage operate over the choices that comprise the life courses of individuals and communities. CAD and life course theory supports the Carr and Kefalas’s (2009)[47] model that a place that focuses its resources on empowering people to leave will have fewer to apply to those who stay, thus making it harder for each cycle to succeed. Devoting more resource investment toward Stayers can change a town’s prospects for more development.

Life course theory examines the choices individuals made in their circumstances. Generations ago, people moved into the rural areas because of the economic opportunity just as the agricultural era was about to wane, an event unforeseen by the hopeful settlers. Industrialization opened the doors to the West through rails and was the harbinger of the region's eventual economic demise as people were drawn back out of the rural areas. Perhaps the greatest irony is that the life course option selection paradigm, providing for the children’s future that led to the town’s demise is the same paradigm bringing people to the town development meetings. Rural families made decisions to provide for their children’s futures that further eroded the capital bases of their towns. As their children moved away and only visited, today’s rural elderly are very often left behind in economically stagnant towns with less human capital than fifty years ago. The cumulative disadvantage of the present offers few sound development options. Changing the life courses of these towns and the people in them requires substantial and fundamental change, for which concepts in Carr and Kefalas’s (2009)[48] work provide a good starting point.

Perhaps the intuitive wisdom of life experience leads the older population, whether working or retired, to attend the meetings, because they know how important it is to set the town on a course of strength. Community coaches must be aware of the potential for repeated efforts to worsen the prospects for success, however, and perhaps require participation of key decision makers before committing resources to "another attempt".

In response to the follow up question, “What do you think are the broader impacts of having this kind of organized community discussion,” one Wilmaton resident replied, “We are so good at talking about things but nothing ever gets accomplished, but with this group and having this discussion we are finally going to take the steps to do something actually. We identified so many champions who are going to take ownership and move things forward." But when asked, "How

are the action steps you identified progressing?" another resident of the same town replied, "Not really. A lot of people have ideas and share ideas but are always looking for someone else to do the work."

All community leaders can keep in mind that the life course of a town is made from the accumulated choices made in the face of history unfolding. Therefore, a first step for community sustainability is to check assumptions and choose wisely.

End Notes: Junker, Daren, Meredith Redlin, David P. Olson, and Gary Aguiar. “Absence of Age-Income Correlation in Ten Rural South Dakota Counties: Real Capital Outflow or Self-selection Bias?.” *Online Journal of Rural Research & Policy* (7.3, 2012).

1. Diaz-Giménez, Javier, Andy Glover, and José Victor Ríos-Rull. 2011. "Facts on the Distributions of Earnings, Income, and Wealth in the United States: 2007 Update." *Quarterly Review (02715287)* 34:2-31. [back]

2. Diaz-Giménez, Javier, Andy Glover, and José Victor Ríos-Rull. 2011. "Facts on the Distributions of Earnings, Income, and Wealth in the United States: 2007 Update." *Quarterly Review (02715287)* 34:2-31. [back]

3. Reddy, Sanjay and Camelia Minoiu. 2009. "Real Income Stagnation of Countries 1960-2001." *Journal of Development Studies* 45:1-23. [back]

4. Renski, Henry. 2009. "New Firm Entry, Survival, and Growth in the United States: A Comparison of Urban, Suburban, and Rural Areas." *Journal of the American Planning Association* 75:60-77. [back]

5. Renski, Henry. 2009. "New Firm Entry, Survival, and Growth in the United States: A Comparison of Urban, Suburban, and Rural Areas." *Journal of the American Planning Association* 75:60-77. [back]

6. Renski, Henry. 2009. "New Firm Entry, Survival, and Growth in the United States: A Comparison of Urban, Suburban, and Rural Areas." *Journal of the American Planning Association* 75:60-77. [back]

7. Uzzi, Brian and Shannon Dunlap. 2005. "How to Build Your Network." *Harvard Business Review* 83:53-60. [back]

8. Kangayi, Chipo, M. Rose Olfert, and Mark Partridge. 2009. "Co-operatives and Rural Community Population Growth: Evidence from Canada." *Review of Regional Studies* 39:49-71. [back]

9. Kangayi, Chipo, M. Rose Olfert, and Mark Partridge. 2009. "Co-operatives and Rural Community population Growth: Evidence from Canada." *Review of Regional Studies* 39:49-71. [back]

10. Farole, Thomas, Andrés Rodríguez-Pose, and Michael Storper. 2011. "Human geography and the institutions that underlie economic growth." *Progress in Human Geography* 35:58-80. [back]

11. Partridge, Mark, Ray D. Bollman, M. Rose Olfert, and Alessandro Alasia. 2007. "Riding the Wave of Urban Growth in the Countryside: Spread, Backwash, or Stagnation?" *Land Economics* 83:128-152. [back]

12. Lee, Gary R. and Marie L. Lassey. 1980. “Rural-Urban Differences Among the Elderly: Economic, Social, and Subjective Factors.” *Journal of Social Issues* 36(2):62-74. [back]

13. Tickamyer, Ann R. and Cynthia M. Duncan. 1990. “Poverty and Opportunity Structure in Rural America.” *Annual Review of Sociology* 16:67-86. [back]

14. Philip, Lorna J. and Alana Gilbert. 2007. "Low Income amongst the Older Population in Great Britain: A Rural/Non-rural Perspective on Income Levels and Dynamics." *Regional Studies* 41:735-746. [back]

15. Philip, Lorna J. and Alana Gilbert. 2007. "Low Income amongst the Older Population in Great Britain: A Rural/Non-rural Perspective on Income Levels and Dynamics." *Regional Studies* 41:735-746. [back]

16. Mookherjee, Dilip, Debraj Ray, and Stefan Napel. 2010. "ASPIRATIONS, SEGREGATION, AND OCCUPATIONAL CHOICE." *Journal of the European Economic Association* 8:139-168. [back]

17. Elder, Glen H. 1998. "The Life Course as Developmental Theory." *Child Development* 69:1-12. [back]

18. Elder, Glen H. 1998. "The Life Course as Developmental Theory." *Child Development* 69:1-12. [back]

19. Elder, Glen H. 1998. "The Life Course as Developmental Theory." *Child Development* 69:1-12. [back]

20. Dannefer, Dale. 2003. "Cumulative Advantage/Disadvantage and the Life Course: Cross-Fertilizing Age and Social Science Theory." *The Journals of Gerontology Series B: Psychological Sciences and Social Sciences* 58:S327-S337. [back]

21. Dannefer, Dale. 2003. "Cumulative Advantage/Disadvantage and the Life Course: Cross-Fertilizing Age and Social Science Theory." *The Journals of Gerontology Series B: Psychological Sciences and Social Sciences* 58:S327-S337. [back]

22. Dannefer, Dale. 2003. "Cumulative Advantage/Disadvantage and the Life Course: Cross-Fertilizing Age and Social Science Theory." *The Journals of Gerontology Series B: Psychological Sciences and Social Sciences* 58:S327-S337. [back]

23. Dannefer, Dale. 2003. "Cumulative Advantage/Disadvantage and the Life Course: Cross-Fertilizing Age and Social Science Theory." *The Journals of Gerontology Series B: Psychological Sciences and Social Sciences* 58:S327-S337. [back]

24. Dannefer, Dale. 2003. "Cumulative Advantage/Disadvantage and the Life Course: Cross-Fertilizing Age and Social Science Theory." *The Journals of Gerontology Series B: Psychological Sciences and Social Sciences* 58:S327-S337. [back]

25. Carr, Patrick J. and Maria J. Kefalas. 2009. *Hollowing Out the Middle: The rural brain drain and what it means for America*. Boston, MA: Beacon Press. [back]

26. U.S. Bureau of the Census. 2009b. "United States - Selected Economic Characteristics: 2007-2009", Retrieved 12/8/2011, 2011 (http://factfinder.census.gov/servlet/ADPTable?_bm=y&-geo_id=01000US&-qr_name=ACS_2009_3YR_G00_DP3YR3&-ds_name=&-_lang=en&-redoLog=false&-format=). [back]

27. U.S. Bureau of the Census. 2009a. *ACS-2009 Extract* [MRDF]. Washington, DC: U.S. Bureau of the Census [producer]. Brookings, SD: Rural Life and Census Data Center [distributor]. [back]

28. U.S. Bureau of the Census. 2009a. *ACS-2009 Extract* [MRDF]. Washington, DC: U.S. Bureau of the Census [producer]. Brookings, SD: Rural Life and Census Data Center [distributor]. [back]

29. Minitab 16 Statistical Software. 2010. [Computer software]. State College, PA: Minitab, Inc. (www.minitab.com). [back]

30. U.S. Bureau of the Census. 2009b. "United States - Selected Economic Characteristics: 2007-2009", Retrieved 12/8/2011, 2011 (http://factfinder.census.gov/servlet/ADPTable?_bm=y&-geo_id=01000US&-qr_name=ACS_2009_3YR_G00_DP3YR3&-ds_name=&-_lang=en&-redoLog=false&-format=). [back]

31. U.S. Bureau of the Census. 2009a. *ACS-2009 Extract* [MRDF]. Washington, DC: U.S. Bureau of the Census [producer]. Brookings, SD: Rural Life and Census Data Center [distributor]. [back]

32. U.S. Bureau of the Census. 2009b. "United States - Selected Economic Characteristics: 2007-2009", Retrieved 12/8/2011, 2011 (http://factfinder.census.gov/servlet/ADPTable?_bm=y&-geo_id=01000US&-qr_name=ACS_2009_3YR_G00_DP3YR3&-ds_name=&-_lang=en&-redoLog=false&-format=). [back]

33. U.S. Bureau of the Census. 2009b. "United States - Selected Economic Characteristics: 2007-2009", Retrieved 12/8/2011, 2011 (http://factfinder.census.gov/servlet/ADPTable?_bm=y&-geo_id=01000US&-qr_name=ACS_2009_3YR_G00_DP3YR3&-ds_name=&-_lang=en&-redoLog=false&-format=). [back]

34. Diaz-Giménez, Javier, Andy Glover, and José Victor Ríos-Rull. 2011. "Facts on the Distributions of Earnings, Income, and Wealth in the United States: 2007 Update." *Quarterly Review (02715287)* 34:2-31. [back]

35. Diaz-Giménez, Javier, Andy Glover, and José Victor Ríos-Rull. 2011. "Facts on the Distributions of Earnings, Income, and Wealth in the United States: 2007 Update." *Quarterly Review (02715287)* 34:2-31. [back]

36. Diaz-Giménez, Javier, Andy Glover, and José Victor Ríos-Rull. 2011. "Facts on the Distributions of Earnings, Income, and Wealth in the United States: 2007 Update." *Quarterly Review (02715287)* 34:2-31. [back]

37. Reddy, Sanjay and Camelia Minoiu. 2009. "Real Income Stagnation of Countries 1960-2001." *Journal of Development Studies* 45:1-23. [back]

38. Philip, Lorna J. and Alana Gilbert. 2007. "Low Income amongst the Older Population in Great Britain: A Rural/Non-rural Perspective on Income Levels and Dynamics." *Regional Studies* 41:735-746. [back]

39. Kangayi, Chipo, M. Rose Olfert, and Mark Partridge. 2009. "Co-operatives and Rural Community Population Growth: Evidence from Canada." *Review of Regional Studies* 39:49-71. [back]

40. Farole, Thomas, Andrés Rodríguez-Pose, and Michael Storper. 2011. "Human geography and the institutions that underlie economic growth." *Progress in Human Geography* 35:58-80. [back]

41. Uzzi, Brian and Shannon Dunlap. 2005. "How to Build Your Network." *Harvard Business Review* 83:53-60. [back]

42. Partridge, Mark, Ray D. Bollman, M. Rose Olfert, and Alessandro Alasia. 2007. "Riding the Wave of Urban Growth in the Countryside: Spread, Backwash, or Stagnation?" *Land Economics* 83:128-152. [back]

43. Carr, Patrick J. and Maria J. Kefalas. 2009. *Hollowing Out the Middle: The rural brain drain and what it means for America*. Boston, MA: Beacon Press. [back]

44. Flora, Cornelia Butler and Jan L. Flora. 2008. *Rural Communities: Legacy + Change, 3rd edition.* Philadelphia, PA: Westview Press. [back]

45. Carr, Patrick J. and Maria J. Kefalas. 2009. *Hollowing Out the Middle: The rural brain drain and what it means for America*. Boston, MA: Beacon Press. [back]

46. Carr, Patrick J. and Maria J. Kefalas. 2009. *Hollowing Out the Middle: The rural brain drain and what it means for America*. Boston, MA: Beacon Press. [back]

47. Carr, Patrick J. and Maria J. Kefalas. 2009. *Hollowing Out the Middle: The rural brain drain and what it means for America*. Boston, MA: Beacon Press. [back]

48. Carr, Patrick J. and Maria J. Kefalas. 2009. *Hollowing Out the Middle: The rural brain drain and what it means for America*. Boston, MA: Beacon Press. [back]

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David P. Olson is the Community Development Program Director for the South Dakota State University Extension. His work focuses on building the capacity of residents in rural communities. He has engaged in 40+ years' of work with citizens associations, nonprofit organizations, and city governments in rural, suburban, and urban settings. He advocates the involvement of citizens creating community visions built on their assets and encourages implementation to improve their communities.

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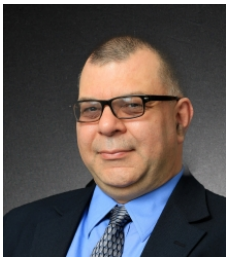

Gary Aguiar, a professor of political science at South Dakota State University since 1999, teaches courses in U.S. Politics. His research interests explore the connections between people, place, and politics, with a particular interest in rural and small-towns in the Great Plains. His book, Government in the Countryside, is the first book on rural politics in the U.S. in a quarter century.