



Conditions facilitating aging in place in rural communities: The case of smart senior towns in Iowa

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ABSTRACT

The article explores why some small rural communities affected by population aging deal better with this challenge than others, by analyzing the data from the Iowa Small Towns Project (ISTP). The analysis is based on comparisons between ‘smart senior’ towns and ‘vulnerable senior’ towns. The former are defined as aged, but provide good quality senior services according to senior citizens, while the latter are also aged but senior services are rated much lower. Drawing from the aging in place and quality of life literatures, the analysis is focused on several domains, including local services, social capital, as well as opportunities for socializing, leisure, and community engagement. It also encompasses comparisons between two main age groups: residents aged 65+ and those under 65. The findings indicate that smart senior towns score higher on most indicators compared with vulnerable ones. However, the assessments of older residents are significantly more positive than those of younger cohorts.

1. Introduction

1.1. Processes of rural aging in the U.S. and Iowa

By 2030, about 20% of the overall American population is expected to be aged 65 or older (Glasgow and Brown 2012, p. 442). The rural population is aging more rapidly than its urban counterpart. In 2012–2016, the share of people aged 65 years, or more was 17.5% in rural areas, compared to 13.8% in urban places (Smith and Trevelyan 2019, p. 2). Rural counties account for 85% of those most aged, with shares of residents aged 65+ reaching 20% or beyond (Cromartie 2018, p. 5). Different population trends contribute to rural aging depending on a demographic region. A significant number of rural counties have been aging predominantly due to attracting retirees for their amenities and recreation possibilities. These are in the Upper Great Lakes, the Appalachians and Ozarks, the Texas hill country, and across the Rocky Mountain West. Other aged rural counties are characterized by a persistent population loss due to out-migration, especially of young adults, pushed out by the lack of opportunities related to restructuring of agriculture and industry. These are located mostly in the Northern Great Plains and Corn Belt, with a smaller concentration in the Midwest and along Appalachia (Cromartie 2018; Glasgow and Brown 2012).

Iowa belongs to the latter category. Its rural population constitutes a substantial portion of the state, i.e., about one fourth in case of rural counties and almost a half when combined with those in counties with a small city. Rural Iowa is significantly affected by demographic aging. In 2012–2016, the share of the state’s population aged 65 or more in rural areas amounted to 41.1%, whereas the average percentage for the entire country was 22.9% (Smith and Trevelyan 2019, p. 5). Older adults in Iowa’s rural communities are ‘aging in place’ and represent an increasing part of the rural population (Liu and Besser 2003).

Since the beginning of the 20th century, transformations in the physical and social infrastructure of America, particularly in farming, but also in local manufacturing, have been provoking the loss of population in rural areas in Iowa, as well as in the rest of the country (Peters 2013). This combined with demographic aging leads to new pressing challenges—how to preserve a good quality of life in aging and shrinking rural communities.

The Iowa Small Towns Project data, a unique longitudinal study on the quality of life in small rural towns, indicate that some rural communities may deal better with these challenges than others (Peters et al., 2018; Peters 2019). However, these studies were not focused on the older adults’ sub-population and did not include comparisons across age groups. Therefore, the insights provided by our analysis are unique, and

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may be relevant not only for rural Iowa, but also other regions of similar socio-demographic characteristics, especially within Great Plains and Midwest areas (Liu and Besser 2003). Despite structural differences in terms of, for example, financing service provision, lessons from Iowa will be also valuable for other countries facing demographic changes in rural areas.

1.2. Conceptual approach

We conceptualize ‘smart senior’ towns as local communities being good places for older adults to live, i.e., where their needs are addressed in a way that is satisfactory for them, and which allow them for aging in place. This means the opportunity for older people to live in their own home and community safely, independently, and comfortably (WHO 2015). It contributes to the well-being of older adults, provides a sense of biographical continuity, and allows avoiding costs of moving (Bigonesse and Chaudhury 2020; Forsyth and Molinsky 2021; Pani-Harreman et al., 2021). Our approach is in line with the most recent trends in the literature encompassing a growing recognition of neighborhood/community influence, the importance of access to services and amenities, as well as older adults’ empowerment and social inclusion as crucial for aging in place (Bigonesse and Chaudhury 2020). We see aging in place as a policy issue that requires comprehensive planning adapted to specific needs, conditions and resources of a given community (Warner et al., 2017).

Drawing from this literature, we argue that several domains need to be included in our analysis. First, we focus on local services as important factors of aging in place. Previous research showed also that satisfaction with these is a solid indicator of overall community quality of life (Boncinelli et al., 2015; Potter et al., 2012). We include both residents’ opinions about crucial services, and their use of services in town. The former refer to jobs, medical services, public schools, housing, local government services (e.g., utilities), as well as child and senior services. The latter addresses the issue to what extent various types of services are actually used in town in terms of people’s daily needs. In line with conceptualizing aging in place as a policy issue, we also include the perceptions of local leadership.

Secondly, we include the place dimension in terms of community perceptions, social relationships, and place attachment. Aging in place refers to social connections (family and friends), security and a sense of identity (Pani-Harreman et al., 2021; Stedman 2002). Attachment to place combines social, environmental, emotional, and psychological meanings of place that develop over time (Butcher and Breheny 2016).

Finally, we include the dimension of social capital, civic engagement, and socialization in town. These refer to local participation and social inclusion important for aging in place. There is strong evidence that social capital is an important factor contributing to the quality of life in local communities dealing with change, as well as community resiliency (Aldrich and Meyer 2015). The research by Brown et al. (2019) shows that rural communities can maintain a good quality of life among older residents thanks to building cooperation between relevant local institutions as well as partnerships with external organizations that facilitate aging-related service provision. Importantly, people’s community engagement and participation in decision-making is crucial for both age-friendly and intergenerational planning (Warner and Zhang 2019; Warner et al., 2017). For building social capital and social connections between people, the importance of so-called ‘third places’ is emphasized. These include churches, libraries, local shops, etc., which provide opportunities for people to meet and contribute to social cohesion in the community (Zhang and Warner 2021).

1.3. Justification and objectives

The article’s main objective is to explore why some small rural towns affected by population aging provide better opportunities for aging in place than others by using examples of rural communities included in

the Iowa Small Towns Project. We address the following research questions: 1) Do smart senior towns differ from vulnerable ones in terms of basic demographic and economic characteristics? 2) Are local services perceptions and use different in smart and vulnerable senior towns according to residents aged 65+ and under? 3) How important is place dimension (community perceptions and attachment) for residents across two age groups living in smart and vulnerable senior towns? 4) Are social capital perceptions, as well as the levels of civic engagement and local socialization different in smart and vulnerable senior towns when comparing experiences of those under and 65+?

Aging towns are conceptualized as those having above-average shares of people aged 65+ in comparison with other rural communities investigated within ISTP. Senior services refer to senior citizen programs available in the community, subjectively evaluated by their older residents. Consequently, smart senior towns are those affected by population aging but where the quality of senior services is assessed above average, whereas vulnerable senior ones are also of a significantly aged population, but senior services are rated significantly lower. We understand ‘smartness’ in line with the age-friendly planning approach emphasizing the importance of strategic thinking about addressing population aging at the local level and providing opportunities for aging in place (Warner et al., 2017). We see higher satisfaction with senior services provision as a good indicator of such an approach in the community.

This analysis contributes to existing literature on rural aging by addressing several gaps. First, a substantial number of research is focused specifically on services provision and accessibility (e.g., healthcare) without exploring relationships between these and rural communities’ characteristics (Brown et al., 2019). Second, a comparative analysis of rural localities differing in terms of subjective quality of senior services is missing among existing research. Thus far, such analysis covered variance of subjective quality of life in small rural towns, but regarding all residents’ perceptions and not focusing on the elderly population (Peters et al., 2018; Peters 2019). Third and relatedly, the article provides a unique comparative analysis of subjective perceptions related to the quality of life and local community between residents aged 65 or more and those aged under 65. It is important to determine whether ‘smart senior’ status of a given community emerges mostly from older people’s positive perceptions or these are shared by residents regardless of their age.

The analysis presented in the article is based on quantitative data drawn from the Iowa Small Towns Project 2014 and selected secondary data from the U.S. Census 2010. Census covariates are lagged to minimize potential endogeneity between demographic and economic effects and quality of life ratings. First, a previous research overview about services provision and place attachment in the context of aging in place will be provided, followed by discussion on social capital and community engagement literature. Next, the research findings will be presented in detail. They will be preceded by a description of the study’s methodology, including data sources and methods of data analysis.

2. Previous research

2.1. Services provision and quality of life in rural communities

Quality of life is usually conceptualized in terms of scale (individuals, communities, or nations), as well as in terms of choice between objective versus subjective measures (Sirgy et al., 2000). The former refers to the actual properties of an asset and an evaluation of its quality based on an external criterion, whereas the latter regards attitudes, feelings, and satisfactions with assets. According to Sirgy (2011), objective measures have little bearing on personal utility since it is subjective experiences that matter the most.

In this study, we refer to the concept of the quality of life by focusing on the community services dimension and its main components including medical services, public schools, housing, local government

services (e.g., utility services), child services (e.g., childcare facilities), as well as senior services (i.e., programs for seniors available in the local community). These are complimented by quality of local jobs measuring employment opportunities for residents in the community. Importantly, rural and suburban communities usually lag in age-friendly physical design in comparison with cities. However, these gaps can be compensated for by service delivery, such as housing options, health care, or recreation and entertainment opportunities (Warner and Zhang 2019). Previous research also showed that satisfaction with community services is a solid indicator of overall community quality of life (Boncinelli et al., 2015; Potter et al., 2012). The latter is determined rather by satisfaction with local services than other quality of life considerations, like life satisfaction (Epley and Menon 2008; Grzeskowiak et al., 2003). The community quality of life goes far beyond these, referring to a satisfaction with a place and its physical environment, socioeconomic conditions, community organizations, as well as cultural identity associated with it (Potter et al., 2012). Therefore, quality local services should be perceived as transforming physical spaces into livable communities.

2.2. Aging in place and place attachment

Aging in place is a multidimensional concept encompassing physical space, social connections, and services. Its definitions are based on either more descriptive or normative approaches. The former suggests staying put as long as possible without moving to a long-term care facility or remaining in the vicinity, while the latter refers to aging in place as a policy ideal or older adults' choice of preferred lifestyle, living arrangements, as well as access to services and amenities (Forsyth and Molinsky 2021). The most important factors influencing aging in place include older adults' individual experiences and characteristics (e.g., a sense of autonomy), built environment (e.g., affordable housing options), social support and interactions community-based services crucial for addressing daily needs, and mobility (e.g., access to transportation) (Bigonnesse and Chaudhury 2020, pp. 237–240).

Stedman (2002) argues that identity is a crucial component of place due to meanings ascribed to surroundings that strongly contribute to one's 'self' definition. The relationship between place attachment, i.e., personal identification with the setting, and place satisfaction, i.e., an attitude toward setting is usually positive but should not be perceived as automatic. However, the combination of both influence people's behavior. Importantly, place attachment can persist even though the actual environment changes, sustained by memories and nostalgia (Bell 1997; Stedman 2003; Raymond et al., 2017). Place refers not only to physical environment and its meanings, but also social environment, where family and friends are of particular significance (Butcher and Breheny 2016).

2.3. Social capital and community engagement in rural communities

A basic definition of social capital includes social networks, norms of reciprocity, and trust (Robison and Ritchie, 2016). There are two basic types of social capital identified in the literature: bonding and bridging. Bonding social capital refers to social relationships between people who are somewhat similar in terms of socio-economic status, life experiences and other social characteristics, whereas bridging one refers to the opposite, i.e., social ties between dissimilar people in the community (Putnam 2000). Social capital of the first type tends to be inward looking and strengthening homogenous groups, as well as exclusive identities (Poortinga 2012), whereas the second one is perceived as outward looking and connecting different groups, which facilitates access to a greater variety of resources and information needed to achieve some collective purpose (Hawkins and Maurer 2010). Bridging social capital embraces multiple identities, which results in more collective actions for the benefit of and supported by the entire local community. It favors development and change, whereas bonding social capital is of a more conservative nature aiming at keeping status quo. Highly bonded

communities are very self-sufficient, but, at the same time, are fertile ground for localism, elitism, and mistrust of outsiders (Poortinga 2012). Too much bridging social capital and not enough of bonding may, in turn, result in low psychological support, weak personal identities, as well as low community attachment (Hawkins and Maurer 2010).

There is strong evidence that social capital is an important factor contributing to the quality of life in local communities dealing with change, as well as community resiliency (Aldrich and Meyer 2015; Peters 2019). For example, in small Midwestern towns high levels of bonding and bridging social capital are correlated with smaller declines in community quality of life over time, and better resiliency to economic and natural disasters (Besser 2013). European research showed that lower social capital is related to lower quality of social services and physical infrastructure, as well as lower investment in the community (Haase et al., 2012).

For the processes of social capital generation at the local level, participation in local groups, as well as social connections emerging in 'third places', such as local library, grocery store or food establishment are crucial. It is argued that social capital and social relationships are especially important in communities, where local physical infrastructure does not meet people's needs (Zhang and Warner 2021).

3. Data and methods

3.1. Data and variables

Quantitative data for analysis presented in this paper are based on the U.S. Census and the ISTP, which is a longitudinal survey of residents in 99 small towns in Iowa, conducted in 1994, 2004 and 2014. In this paper, we analyze data collected in 2014 wave. Small towns are defined as municipalities not adjacent to a metropolitan city (50,000 and over) whose populations were between 500 and 10,000 people in 1990. Such definition is in line with U.S. Census Bureau categories including urban centers with metropolitans having 50,000 or more people, micropolitans with populations between 10,000 and under 50,000, and non-core or rural places with small cities and towns below 10,000 residents. A two-stage sampling design is employed, first randomly selecting one small town in each Iowa county in 1994. Then in subsequent waves, randomly selecting 150 housing units in each selected town. The response rate (RR3) in 2014 was 41.5 percent ($n = 6163$), which is a similar level to U. S. Census Bureau's (2014) mailed response rate which amounted to 48% in the American Community Survey. The sampled communities were representative of all Iowa towns meeting the ISTP criteria, based on decennial Census data (Besser et al., 2015).

Variables from the ISTP include *quality of life* indicators measured on a four-point Likert scale from poor to very good. Choice of indicators was informed by the personal utility model of quality of life. The *use of local services* in the community is percent of residents indicating they mostly stay in their community to obtain particular goods or services, as opposed to going outside the community. *Perceptions of community and local leaders* is measured using a 7-point semantic differential scale. Leadership traits are grounded in the shared-closed leadership model outlined by Northouse (2010). *Social capital, civic engagement and community attachment* are measured using five-point Likert scales ranging from strongly disagree to strongly agree, with a neutral option. Selection of indicators was informed by the social capital literature. Active membership in local organizations is the percent of residents who both belong to the organization and attend at least six meetings or more during the year. *Socialization* in the community is the percent of people who visit certain sites on a weekly or daily basis. Measures were created for residents over and under age 65, based on self-reported age. Demographic and economic conditions for each town are taken from the U. S. Census Bureau's American Community Survey for 2010 (2008–2012 estimates) and the Decennial Census for 2000 (SF-3). We lag Census covariates to minimize potential endogeneity between demographic and economic effects and quality of life ratings.

3.2. Data analysis

Smart senior towns are ones where the senior population is high, and where seniors report high satisfaction with senior citizen programs and services. We operationalize ‘senior towns’ by using the percentage of people aged 65 and over in 2010. We measure ‘smartness’ or ‘vulnerability’ using subjective assessments of the quality of senior services by residents 65+. Using towns as the unit of analysis, we classified the $n = 99$ towns into four discrete categories based on z-scores of two indicators mentioned above, excluding towns within 1.2 standard deviation around the mean. Higher thresholds of 1.5 and 2.0 deviations around the mean resulted in too few cases for analysis. Smart senior towns are those with above average shares of people aged 65+, and higher quality ratings of senior services by this age group. Vulnerable senior towns are also high in terms of the population 65+, but the quality of senior services was rated low. The remaining two categories had smaller senior populations and are grouped together into one category of ‘other towns’ for analysis.

To address our research questions, a multivariate general linear model (traditionally MANCOVA) was used to explore conditional mean differences across three categories that include smart senior towns, vulnerable senior towns, and other towns. Unlike the classification stage, in the MANCOVA we use individuals living in the selected towns as the unit of analysis. To ensure accurate comparisons across towns of different sizes and wealth, we include population and median household income as control variables. MANCOVA is generalization of ANCOVA to multiple dependent or response variables. In this model, n is the number of cases, p the number of dependent variables, j the number of groups, and k the number of covariates.

$$Y = Z\tau + X\beta + E$$

Equation 1

In equation (1), Y is a $n \times p$ matrix of dependent variables, Z is a $n \times j$ design matrix applied to cases, τ is a $j \times p$ treatment effect matrix applied to dependent variables, X is a $n \times k$ matrix of covariates, β is a $k \times p$ matrix of regression parameters, and E is a $n \times p$ matrix of residuals. Typically, MANCOVA tests the omnibus null hypothesis that the group effects are identical across dependent variables (e.g., $H_0: \tau_1 = \tau_2 = \dots = \tau_j = 0$). However, in this analysis we are primarily interested in testing specific group differences. To do this, we use the Games-Howell test, which is robust to unequal group sizes and variances (Cohen et al., 2003). Ex post analysis confirms residuals for all models are independent and multivariate normal, which is an assumption of MANCOVA.

4. Results

4.1. Identification of smart senior towns and vulnerable senior towns

The scatterplot of small towns along standardized population shares age 65 and older and quality of senior services by those aged 65+ is presented in Fig. 1, from which we identify smart and vulnerable senior towns, as well as other towns. The percentage of people aged 65 and more is a standard measurement of demographic aging process in a given population (e.g., United Nations 2019). Subjective perceptions of the quality of senior services available locally expressed by older residents themselves (those aged 65+) are more useful for our analysis compared to all residents’ opinions, as they likely have direct knowledge of these services.

We found $n = 8$ smart senior towns, $n = 6$ vulnerable senior towns, and $n = 14$ communities which we clustered within other towns’ category. To maximize differences in our analysis, towns within 1.2 standard deviations of the mean are excluded. Smart senior towns score much higher in terms of positive evaluations of senior services’ quality compared to those other towns which are not so affected by population aging, but their senior services’ assessment is above average. Vulnerable senior towns also have above average shares of people over age 65, but ratings of senior services were low. Possibly, it may be easier to arrange

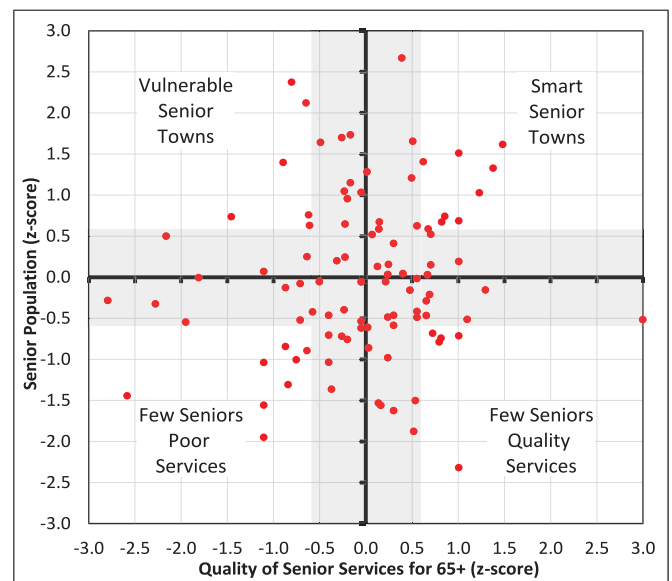


Fig. 1. Plot of standardized population shares age 65 and older (2010) and quality of senior services for those 65 and older (2014) for $n = 99$ small towns in Iowa. Gray bars represent 1.2 standard deviations around the mean.

local senior programs fitting well into older adults’ needs when their number is substantial but not too overwhelming for local provision systems. Another explanation could be related to the age structure of older adults’ population. Higher shares of people aged 65+ may also translate into higher percentages of ‘middle-old’ (aged 75–84) and ‘oldest-old’ (aged 85 and more), who, especially in case of the latter, more often suffer from disabilities and chronic illnesses requiring more specialized solutions.

Geographically, almost all of these towns were located in the northern and west central areas of Iowa, which have experienced sizable depopulation over the past decades (see Fig. 2).

Both smart and vulnerable towns are distant from larger metro city areas, which means that the former do not benefit from their localization.

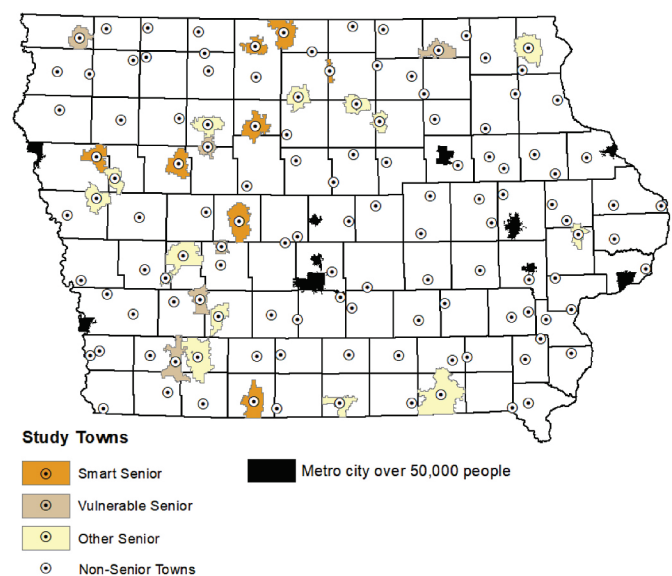


Fig. 2. Map of smart senior, vulnerable senior, other, and non-senior towns for $n = 99$ small towns in Iowa. Dots represent approximate location of the town in the postal delivery area.

4.2. Demographic and economic differences between smart senior and vulnerable senior towns

Demographic and economic conditions are important structural factors shaping the local context, and which may contribute to or hinder the services provision, as well as overall improvement of the quality of life. Differences between smart and vulnerable senior towns, as well as other towns, are presented in Table 1. Vulnerable senior towns' populations are clearly smaller in comparison with smart senior communities (866 on average vs. 2030), also their population density is lower (605.41 sq.mi vs. 894.90 sq.mi). This is consistent with arguments that services provision tends to be more costly in case of less and more dispersedly populated areas (O'Shea 2009). When analyzing changes between 2000 and 2010, processes of population decline seem to be most advanced in the other towns, and, however to a lesser extent, in vulnerable ones in comparison with smart senior towns. It may suggest that the latter are relatively good places to live not only for older adults but also people from younger age cohorts. Smart senior towns are also characterized by significantly better indicators of human capital resources in comparison with vulnerable senior towns (as well as other towns). Namely, they have lower percentage of high school dropouts (12.23 vs. 15.46%), and higher share of 4-year college graduates (18.49 vs. 13.18%). Stronger resources in terms of human capital may translate into better local leadership, as well as better communities' capacity to solve local problems, also those related to services provision (e.g., Chaskin 2001). Higher education level also correlates with better health due to more knowledge about disease prevention and the importance of a healthy lifestyle (Mirowsky and Ross 1998).

In terms of economics, we find that smart senior towns have several features that distinguish them from the two other categories (see Table 1). The poverty rates are statistically identical for all groups. However, median household incomes are significantly higher in smart senior communities, especially compared to vulnerable ones (\$43,007 vs. \$38,050). Similar differences are observed in case of median home values (\$83,813 vs. \$55,367). Higher incomes may mean better capacity for contributions to local groups and organizations, as well as other types of local investment (Morton 2003). Higher home values probably reflect that a town is well-kept, as well as a demand for housing in the community. Possibly, these are related to stronger labor market in case of smart senior towns, especially in comparison with vulnerable senior towns, as evidenced by higher labor force participation rates (47.41 vs. 40.98%), and shorter commuting times (18.24 vs. 21.94 min). Again, this suggests that smart senior towns may be good places to live not only from older adults' perspective, but also for younger people who still work.

4.3. Quality of life and use of services in town in smart and vulnerable senior towns according to residents' age

According to residents 65+, smart senior towns scored higher on every quality-of-life dimension in comparison with the other two categories, especially vulnerable senior towns (see Table 2). Differences are most striking in the case of medical services (64.65 vs. 35.25%). Importantly, relatively large differences are also seen in child services available locally (39.26 vs. 28.06%), as well as housing (46.62 vs. 35.19%). This means that older adults living in the former perceive them also as good places to live and raise a family. The comparisons between those aged under 65 living in smart and vulnerable towns reveal a similar story. These patterns are confirmed also when comparing perceptions of people aged 85+ with those aged 35 and under (see Appendix, Table A-1). According to the oldest old residents, smart senior towns provide better opportunities for aging in place, as well as raising a family. These are confirmed by young adults' perceptions of smart senior towns scoring significantly better in comparison with vulnerable ones in almost all quality-of-life indicators, especially jobs, which are probably the most important for this age group. Interestingly, when comparing people 65+ and under living in smart senior towns, younger residents evaluate the quality of senior services much lower than their older counterparts (33.43 vs. 58.47%). This suggests that the former base their opinions on second-hand information which may be negatively biased. Alternatively, younger residents may have different preferences or ideas about what senior service should offer.

People aged 65+ living in smart senior towns much more often use services in town in comparison with their counterparts from vulnerable senior towns (see Table 2). The most significant differences are related to primary healthcare (55.10 vs. 25.19%) and shopping for daily needs (64.98 vs. 37.80%). Similar tendencies are observed in the case of recreation and entertainment venues, as well as specialized healthcare. Most probably, smart senior towns offer more in this regard than vulnerable ones. Similarly, those aged under 65 significantly more often use services in town when they live in smart senior towns than vulnerable ones, especially in the case of primary healthcare (47.75 vs. 18.17%), shopping for daily needs (52.72 vs. 27.16%), and recreation venues (36.64 vs. 29.35%). The only exception being entertainment venues, which are rarely used in town by younger residents regardless the town's category. This means that the offerings are rather limited and what is available does not meet their expectations. However, in the case of smart senior towns, their residents aged under 65 use services significantly less often in town than their older counterparts. This means that opportunities available in smart senior towns may not be attractive to younger age cohorts, or that younger people tend to use these services outside of town, as they probably more often drive to larger cities.

Table 1
Demographic and economic differences.

	2010			Change from 2000 to 2010		
	(a) Smart Senior	(b) Vulnerable Senior	Other	(c) Smart Senior	(d) Vulnerable Senior	Other
Towns (number)	8	6	14	<i>n.a.</i>	<i>n.a.</i>	<i>n.a.</i>
Population (number)	2,030	866 a	1,384 ab	0.60	−1.69	−3.44 c
Population Density (sq.mi.)	894.90	605.41 a	867.47 b	13.32	−21.20	−49.71 cd
Minorities	4.05	5.04	2.62 ab	1.16	2.77	0.62
Age 17 and under	19.99	21.76	20.40 b	−2.51	−1.08	−1.64
Age 65 and older	27.58	28.97	28.65	−0.57	1.32	−0.22
High school non-completers	12.23	15.46 a	12.78 ab	−5.76	−6.93	−6.98
4-Year college graduates	18.49	13.18 a	13.33 a	3.77	2.80	1.16cd
Median HH income (\$, pct chg)	\$43,007	\$38,050 a	\$40,076	4.95	10.49	−1.37 d
Poverty	13.50	16.12	13.96	2.95	2.55	5.83 c
Median home value (\$, pct chg)	\$83,813	\$55,367 a	\$65,350 ab	12.22	9.11	3.12 c
Labor force participation	47.41	40.98 a	45.59 b	3.57	−1.16 c	1.61 d
Travel time to work (mins.)	18.24	21.94 a	20.80 a	−0.70	−0.06	1.91 cd

Notes: Values reported as percentages and change, except where noted. Significant difference at $p < .05$ (Games-Howell test) from a = smart senior towns 2010; b = vulnerable senior towns 2010; c = smart senior towns 2000–10; and d = vulnerable senior towns 2000–10. Sampling weights used.

Table 2
Quality of life, use of services in town, and local leadership perceptions.

	Age 65 and Older			Under 65 Years		
	(a) Smart Senior	(b) Vulnerable Senior	Other	(c) Smart Senior	(d) Vulnerable Senior	Other
Respondents	218	166	447	306	232	491
Community Quality of Life (% good)						
Jobs	20.23	15.52	19.05	31.23 a	16.68	25.40 cd
Medical services	64.65	35.25 a	64.10 b	61.39	30.42 c	57.14 d
Public schools	57.95	61.72	60.00	59.68	64.06	61.87
Housing	46.62	35.19 a	39.36 a	39.46 a	28.24 c	40.68 d
Local government	59.67	52.71	59.15	66.48 a	46.92 c	59.41 cd
Child services	39.26	28.06 a	26.14 a	36.75	28.18 c	26.31 c
Senior services	58.47	21.49 a	32.18 ab	33.43 a	17.93 c	26.50 cd
Mostly Use Service in Town (%)						
Primary healthcare	55.10	25.19 a	51.02 b	47.75 a	18.17 c	42.92 d
Specialized healthcare	12.94	5.35 a	14.97 b	6.32 a	2.80	7.98 d
Shop for daily needs	64.98	37.80 a	45.32 ab	52.72 a	27.16 c	40.87 cd
Recreation venues	46.09	35.20 a	28.66 a	36.64 a	29.35 c	20.53 cd
Entertainment venues	31.45	21.26 a	26.88	18.56 a	15.09	15.32
Perceptions of Local Leaders (% agree)						
Effective	44.39	35.88	36.17 a	28.92 a	21.95	25.38
Inclusive	30.93	27.98	23.74 a	18.29 a	16.04	18.09
Informed	44.01	30.91 a	33.72 a	29.09 a	21.79 c	27.18
Open-minded	37.00	29.51	32.52	20.22 a	19.47	21.38
Trustworthy	48.32	41.46	40.91	28.44 a	28.14	33.34
Team-building	35.89	27.98	30.27	18.78 a	18.59	18.62

Notes: Conditional means holding population at 1,481 and median household income at \$40,465. Significant difference at $p < .05$ (Games-Howell test) from *a* = smart senior towns, respondents 65 and older; *b* = vulnerable senior towns, respondents 65 and older; *c* = smart senior towns, respondents under 65; and *d* = vulnerable senior towns, respondents under 65.

In the case of perceptions of local leaders, there are not all that many significant differences between smart and vulnerable senior towns according to those aged 65+, with the exception that the leadership of the former is more informed (44.01 vs. 30.91%). Similarly, within the under 65 age group there are almost no significant differences in this respect (except for 'informed'). However, local leadership in smart senior towns scored significantly lower according to these in comparison with their older counterparts. This means that residents under 65 are generally less satisfied with their local leadership. It may also suggest that in smart senior towns local leadership indeed does a better job of addressing older adults' needs. However, older residents may be easier to satisfy in comparison with younger cohorts who may have higher expectations regarding how local leadership should work on behalf of the community.

4.4. Community perceptions, place attachment and social relationships in smart and vulnerable senior towns according to residents 65+ and under 65

In terms of community perceptions (see Table 3), smart senior towns are perceived by older adults (65+) as safer than vulnerable towns (79.20 vs. 67.48%), better kept (61.89 vs. 48.60%), and most significantly as places having more going for them (71.82 vs. 48.36%). For people under 65, the nature of differences between smart and vulnerable towns was similar. Again, however, those living in smart senior towns reported lower values regarding two indicators compared with their older counterparts (town as well-kept and having more going for it). Older residents usually have a longer history of living in town. They are used to being in their local communities and may be more willing to accept its imperfections. Although they often witnessed their town's decline, their perceptions may be positively biased by good memories from younger days (Bell 1997; Stedman 2003). These tendencies are

Table 3
Community perceptions, place attachment, and social relationships.

	Age 65 and Older			Under 65 Years		
	(a) Smart Senior	(b) Vulnerable Senior	Other	(c) Smart Senior	(d) Vulnerable Senior	Other
Respondents	218	166	447	306	232	491
Community Perceptions (% agree)						
Safe	79.20	67.48 a	72.33 a	75.10	60.16 c	73.24 d
Well-kept	61.89	48.60 a	57.81 b	43.53 a	35.51 c	46.52 d
Town has more going for it	71.82	48.36 a	55.30 a	59.54 a	42.08 c	45.66 c
Community Attachment (% agree)						
Years lived in town (years)	47.41	52.67 a	52.67 a	30.90 a	30.28	30.57
Would be sorry to leave this town	69.70	60.99	61.93 a	52.95 a	45.61	47.69
Feel at home in this town	86.00	84.25	82.93	74.32 a	74.22	77.27
Feel attached to this town	74.08	61.45 a	69.69 b	58.99 a	53.40	58.17
Social Relationships in Town (% agree)						
Most of close friends in town	39.43	32.81	35.25	26.41 a	19.00 c	21.00 c
Most of relatives in town	6.48	6.86	6.60	5.44	15.77 c	12.99 c

Notes: Conditional means holding population at 1,481 and median household income at \$40,465. Significant difference at $p < .05$ (Games-Howell test) from *a* = smart senior towns, respondents 65 and older; *b* = vulnerable senior towns, respondents 65 and older; *c* = smart senior towns, respondents under 65; and *d* = vulnerable senior towns, respondents under 65.

confirmed by comparisons between young adults (aged 35 and under) with oldest old (aged 85+) (see Appendix, Table A-1). The former express significantly more positive community perceptions when living in smart senior towns in comparison with other towns' categories. However, these are more positive in the case of the oldest old, especially in the case of perceiving a town as well-kept. However, safety in the community seems to be an issue assessed equally positively for smart senior towns regardless of residents' age.

The indicators of community attachment (see Table 3) are higher for those aged 65+ living in smart senior towns when compared with older residents of vulnerable senior towns, with the exception for the item "I feel at home in this town". This last one, however, may indicate rather a sense of familiarity and comfortability in the area, than attachment as such. As in case of earlier results, residents under 65 living in smart senior towns are characterized by lower levels of community attachment measured by all three indicators than their older counterparts. Interestingly, the outcomes show that the level of community attachment does not have to be correlated with the length of stay in town. Smart senior towns' residents aged 65+ lived there significantly fewer years when compared with their counterparts from vulnerable senior towns. The former may include return migrants who decided to come back to their town after spending some time elsewhere. These returns may be partly motivated by an attachment to a hometown.

Friendships contribute significantly to people's well-being in emotional support and potential help (Nocon and Pearson 2000; Rey et al., 2019), that may also translate into more positive perceptions regarding the community and the quality of life. The percentages of people aged 65 and over indicating that most of their close friends live in town are similar regardless of the town's category, and higher in comparison with those aged under 65 (see Table 3). The explanation could be that older people tend to have a longer history of living in town (more time for making friends). However, smart senior towns provide them with more local spaces for cultivating their friendships. Perhaps therefore younger residents of smart senior towns more often tend to have close friends in town in comparison with their counterparts from

vulnerable and other towns. People aged 65+ less often indicated having more relatives in town regardless of the town's category. Probably, they simply outlived other family members. In the case of people aged under 65, those living in smart senior towns significantly less often pointed out having more relatives in town (as opposed to friends) when compared with their counterparts from vulnerable and other towns. This may mean that they are either outsiders to the community who moved in due to marriage or for other reasons, or their family members had a willingness and enough resources to leave the community.

4.5. Social capital, community engagement and socializing in smart and vulnerable senior towns according to residents' age

No statistical differences were observed in terms of bonding and bridging social capital community perceptions among those aged 65+ and under 65 regardless of their town's category (see Table 4). It is worth noting, however, similar to patterns described earlier, all indicators of both bonding and bridging social capital scored significantly lower among people under 65 living in smart senior towns in comparison with their older counterparts. Younger residents perceived their communities as less trusting and supportive in comparison with those 65+ (41.66 vs. 53.73% and 43.52 vs. 58.63%, respectively). They were also less likely to see their community as inclusive for new residents (27.80 vs. 42.05%) and open to new ideas (23.94 vs. 42.05%). Again, this may suggest differences related to age in terms of expectations how local community should work and how residents should act towards the others. Importantly, indicators of bonding social capital are higher comparing to bridging social capital across towns' categories. It may mean more social cohesion but also resistance to change, as well as less flexibility when addressing challenges.

There are no statistical differences related to civic engagement between those living in smart and vulnerable senior towns within those aged 65+ and under 65 (Table 4). However, in the case of smart senior towns, their people aged under 65 significantly more often than their older counterparts participated in a project last year (49.88 vs. 41.18%)

Table 4
Social capital, civic engagement, and socialization.

	Age 65 and Older			Under 65 Years		
	(a) Smart Senior	(b) Vulnerable Senior	Other	(c) Smart Senior	(d) Vulnerable Senior	Other
Respondents	218	166	447	306	232	491
Social Capital (% agree)						
Bonding: Trusting	53.73	54.52	56.68	41.66 a	38.17	41.14
Bonding: Supportive	58.63	56.10	57.29	43.52 a	44.08	45.94
Bridging: New residents as leaders	42.05	38.76	35.79	27.80 a	24.83	23.49
Bridging: Open to new ideas	44.38	41.67	39.84	23.94 a	26.89	22.89
Civic Engagement (% yes or agree)						
Member of local organizations	27.67	32.68	30.75	38.67	36.78	41.62
Held appointed leadership positions	15.06	17.72	20.08	18.69	14.24	15.23
Participated in a project last year	41.18	38.83	41.56	49.88 a	46.20	49.13
Residents involved in decisions	63.32	59.44	61.36	45.75 a	52.05	48.52
Socialization in Town (% weekly)						
Food establishments	33.19	25.17	35.10 b	33.60	21.85 c	23.12 c
City parks	6.68	4.80	4.58	13.47 a	7.68 c	9.36 c
Town square	16.18	8.75 a	10.78 a	10.07 a	9.20	6.89
Downtown shops	37.51	21.81 a	26.63 a	34.09	17.21 c	22.15 c
Community center	7.64	3.50	7.28 b	3.07 a	2.10	1.78
Golf or country club	12.74	5.94 a	5.45 a	13.15	7.94 c	6.59 c
Church	58.75	54.39	52.71	35.73a	33.57	30.91
Library	16.03	15.78	14.51	9.04	12.22	9.57
Active in Local Groups (% active)						
Service organizations	6.33	5.10	7.77	5.82	3.87	5.95
Recreational groups	16.36	12.06	11.70	14.25	9.92	9.85 c
Civic and social groups	8.74	6.74	8.00	8.05	5.36	8.13
Church and related groups	50.87	48.14	49.04	31.50 a	32.17	31.77

Notes: Conditional means holding population at 1,481 and median household income at \$40,465. Significant difference at $p < .05$ (Games-Howell test) from a = smart senior towns, respondents 65 and older; b = vulnerable senior towns, respondents 65 and older; c = smart senior towns, respondents under 65; and d = vulnerable senior towns, respondents under 65.

but less frequently agree that residents are engaged in decisions in their communities (45.75 vs. 63.32%). Their more direct involvement in the community may explain their less generous opinions about the local leaders. Outcomes presented in [Table A-1](#) (see Appendix) may indicate that young adults' voices are not heard by local leadership. In smart senior towns, local leaders scored significantly higher on every aspect among oldest old (85+) in comparison with people aged 35 and under. The differences are especially striking in the case of effectiveness (62.10 vs. 24.88%), inclusiveness (39.78 vs. 16.00%), and team-building approach (47.43 vs. 17.42%).

When compared with their counterparts from vulnerable senior towns, older adults (65+) living in smart senior towns tend to socialize significantly more often in town in the case of downtown shops (37.51% vs. 21.81%), town square (16.18 vs. 8.75%), and golf or country club (12.74 vs. 5.94%). The indicators for local food establishments, city parks, church and libraries are similar regardless of the town's category. Tendencies for people under 65 are similar, including also local food establishments. These confirm perceptions of smart senior towns as well-kept and having better offerings for their residents in terms of local businesses and recreational community infrastructure. Interestingly, when comparing people under 65 and those aged 65+ in smart senior towns, the former tend to socialize significantly less often in churches (35.73 vs. 58.75%), town square (10.07 vs. 16.18%), and community center (3.07 vs. 7.64%), and more often in city parks (13.47 vs. 6.68%). These differences may be related to age differences in terms of lifestyle and life course. The example of church is particularly interesting, as such engagement and socializing with fellow parishioners or congregants used to be the backbone of American small local communities ([Wuthnow 2015](#)). Residents under 65 socialize in church less often than their older counterparts regardless of their town's category.

This phenomenon is confirmed also by outcomes related to membership in local groups (see [Table 4](#)). People aged under 65 living in smart senior towns are significantly less often active in a local church and related groups when compared with their older counterparts (31.50 vs. 50.87%). Such a tendency is visible also in the case of other towns' categories, although not statistically significant.

5. Discussion

Demographic aging affecting especially rural areas makes the question of what makes a local community a good place for older adults to live, an increasingly pressing issue. The analysis presented in this paper allows for a better understanding of which rural community features and amenities are important for older adults who want to age in place.

Smart senior towns distinguished by the quality of local senior services and programs, score significantly higher than vulnerable ones also in terms of other services, community perceptions, usage of services and recreation venues in town. The differences persist even when controlling for population size and average household income. Surprisingly enough, these are not related to people's more positive or negative perceptions of local leadership and social capital in the community. Moreover, perceptions of people under 65 living in smart senior towns tend to be significantly more negative than their older counterparts, although, in general, they are more positive when compared with younger cohorts from vulnerable and other towns.

18 in-depth interviews conducted in three smart senior towns with purposively selected local informants (residents aged 65+ and representatives of local leadership) shed some light on these outcomes. For example, a current town's 'smart senior status' may be rooted in the community's past and the efforts of previous community leaders to establish good quality services and facilities. In such a case, the present leadership may be perceived not as initiators, but 'guardians' of community assets that were already there. Also, the presence of some services and amenities in town can be linked rather to external forces (e.g., interests of larger health care networks) or local business owners and entrepreneurs, who are not necessarily seen as local leadership

members. Lastly, it seems that bridging social capital and shared leadership approaches may be missing even in smart senior towns. Residents' engagement in local projects does not necessarily translate into them having a sense of being included in decision-making. As research shows, this is a crucial factor for success of age-friendly planning ([Warner et al., 2017](#)). However, according to the interviews, local leaders in smart senior towns tend to respond to challenges as they occur instead of strategically planning ahead. In one of the communities, a closed local school building was turned to a senior housing project, but even there the efforts are focused on keeping 'status quo' in terms of services. The 'aging in place' opportunities are based on existing services and older residents' community attachment as well as their social networks, not local leadership' systemic thinking.

Interestingly, the assessments were significantly more positive in case of residents aged 65 and over in comparison with people under 65. This may mean that smart senior towns are indeed more geared towards addressing older population's needs, while somehow neglecting the perspective of younger age groups. However, alternative explanations are also possible. It is argued that place attachment is strongly linked to one's identity, and usually develops over time. Place meanings can be resistant to actual changes of the physical setting. During the interviews, older adults often tend to evaluate their community through its past, when it used to be busy and thriving ([Bell 1997](#); [Stedman 2003](#)). According to existing research, community satisfaction and well-being tend to be positively correlated with age. Other explanations include cohort effect and the life-course trajectory ([Bardo and Yamashita 2014](#); [Frijters and Beaton 2012](#)), or greater use of accommodative strategies, like downward adjustments of needs ([Hansen and Slagsvold 2012](#)). High values of indicators of place attachment (and higher among people 65+ comparing to those under 65) point towards the importance of the first explanation. Less enthusiastic responses of younger cohorts may indicate that they see the local community as it is here and now, which may not exactly meet their needs. This means that a more intergenerational approach towards local planning is required, as well as understanding that older and younger residents' needs do not have to be mutually exclusive ([Warner and Zhang 2019](#); [Ghazaleh et al., 2011](#)).

The outcomes of this study lead to several policy implications. First, smart senior towns are significantly larger in size in comparison with vulnerable ones. This means that a critical mass in terms of population is needed so that services can be available locally. Smaller towns could pair up with other communities nearby to share the costs of services provision for an adequate number of residents. For example, according to the interviews, one smart senior town shared an ambulance service with a neighboring community. Therefore, bridging social capital should be strengthened at the local level (see [Brown et al., 2019](#)). Second, older adults' own agency should be taken into account as an important asset. Research shows that they are willing to actively participate in designing and managing local service provision according to their needs, not just passively receive them ([Matysiak 2022](#)). Third, local leadership and decision-making should open up more to younger residents, especially young adults, as well as newcomers. They may appreciate the quality of services and opportunities present in smart senior towns, but, at the same time, their weaker community attachment will not prevent them from leaving the community in the future, if their needs and expectations are not met.

However, the study presented in this article has several limitations. The outcomes may not be transferable for communities smaller than 500 people or larger than a population of 10,000. Apart from that, residents of Midwestern rural communities are predominantly white and of European (mostly Northern) origin. This is especially true in case of older adults, as in-migration, mostly from Latin American countries, is a relatively new phenomenon which reflects rather younger age cohorts ([Nabhan-Warren 2021](#)). However, this means that the rural elderly population in Iowa may be much more diverse in the future. Finally, most older adults living in rural Iowa have a much longer history of residence in comparison with retirees who have moved to retirement

communities (Liu and Besser 2003).

5.1. Conclusion

Our analysis has allowed us to identify what factors contribute to Iowa rural towns' 'smart senior' status, i.e., dealing well with a challenge of population aging. Smart senior towns have more favorable demographic and economic characteristics in comparison with other towns, especially vulnerable senior ones. Larger and less declining populations, as well as more financial resources in the community create better conditions for local investments and service provision. Smart senior towns also offer more in terms of opportunities for spending time and socializing in town. However, different conditions for aging in place are not only the result of demographic and economy, as they persist when controlling for population size and average income. These assessments were more positive in case of residents aged 65 and over than in the case of people under 65. The same reality is assessed differently by older and younger residents due to stronger place attachment, as well as place meanings rooted in the past in the case of the former, and different, future-oriented expectations of the latter. However, both groups perceive smart senior towns as safe, which could be a good starting point for a more intergenerational approach in local planning (see Warner and Zhang 2019).

Appendix A

Table A-1

Quality of life, community and local leadership perceptions

	Age 35 and under			Age 85 and Older		
	(a) Smart Senior	(b) Vulnerable Senior	Other	(c) Smart Senior	(d) Vulnerable Senior	Other
Respondents	42	40	62	34	31	92
Community Quality of Life (% good)						
Jobs	51.17	16.46 a	27.30 a	17.39 a	18.65	15.55
Medical services	58.72	28.15 a	56.58 b	74.40	33.81 c	63.29 d
Public schools	45.22	56.88	58.48	41.73	63.79	53.30
Housing	47.74	26.80 a	39.08	52.66	42.32	29.32 c
Local government	73.12	51.04 a	59.48	70.74	56.88	50.34 c
Child services	50.11	32.66	30.46 a	41.08	8.54 c	25.42 cd
Senior services	28.95	9.72 a	17.67	68.71 a	21.71 c	32.51 c
Community Perceptions (% agree)						
Safe	84.72	63.70 a	67.64 a	91.37	78.26	74.64 c
Well-kept	46.11	26.96 a	36.86	72.84 a	60.33	53.84 c
Town has more going for it	64.25	40.26 a	33.73 a	76.60	48.56 c	58.59 c
Perceptions of Local Leaders (% agree)						
Effective	24.88	15.76	26.20	62.10 a	48.21	32.54 c
Inclusive	16.00	21.10	19.10	39.78 a	43.20	19.66 cd
Informed	27.69	22.06	29.91	47.59 a	47.17	28.47 cd
Open-minded	18.16	15.18	18.23	34.13 a	42.77	33.85
Trustworthy	24.15	28.47	26.56	57.33 a	40.77	36.82 c
Team-building	17.42	15.97	16.61	47.43 a	29.58	24.68 c

Notes: Conditional means holding population at 1,487 and median household income at \$40,529. Significant difference at $p < .05$ (Games-Howell test) from a = smart senior towns, respondents 35 and younger; b = vulnerable senior towns, respondents 35 and younger; c = smart senior towns, respondents 85 and older; and d = vulnerable senior towns, respondents 85 and older.

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Authors' statement

Ilona Matysiak: Conceptualization, Methodology, Investigation, Writing – original draft, Writing – review & editing, Funding acquisition, David Peters: Conceptualization, Methodology, Investigation, Formal analysis, Investigation, Visualisation, Funding acquisition.

Declaration of competing interest

None.

Data availability

Data will be made available on request.

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